VOLUME XVII NUMBER 3

JOURNAL of FARM ECONOMICS

AUGUST, 1935

CONTENTS

Intensity of Land Use and the Resettlement Problem. *C. H. Hammar and James H. Muntzel* 409
Significance of Ownership Pattern to Land Use Planning. *R. R. Renne* 423
Economic Implications of Erosion Control in the Corn Belt. *Rainer Schickele* 433
AAA as a Force in Recovery: Further Considerations. *W. W. Wilcox* 449
Freight Rates and Weight Requirements in Mixed Vegetable Shipments. *W. E. Paulson* 459
Appraisal Methods of Federal Land Banks. *P. L. Gaddis* 469
Report of Appraisal Committee of National Committee on Rural Credits. *Hudson Burr* 481
Research on Rural Appraisal Problems. *William G. Murray* 491
Agricultural College Courses for Rural Appraisers. *Robert Hudelson* 501
Social Effects of Purchasing Submarginal Land. *Paul H. Landis* 513
Acreage Reduction and Displacement of Farm Labor. *Wilson Gee* 522
Effect of Agricultural Planning on Farm Management.
In the Corn Belt. *P. E. Johnston* 529
In the Cotton Belt. *R. J. Saville* 539
In the Wheat Belt. *W. E. Grimes* 547
In the Range Territory. *A. F. Vass* 553
In the Dairy Regions of the Middle West. *G. A. Pond* 562
In Dairy Regions. *A. G. Waller* 568
Notes:
Competition and Oligopoly. *G. S. Shepherd* 575
Farm Organization Data and Land Valuation. *M. H. Saunderson* 579
Contacts of Rural People. *Merton Oyler* 583
Apple Prices in Nova Scotia. *C. M. Collins* 585
Public Utility Control of Milk. *H. C. Grant* 588
Books Received 589
Book Reviews 590
News Items 610

Published Quarterly during the months of February, May, August and November by
THE AMERICAN FARM ECONOMIC ASSOCIATION
Publication Office: 450 Ahnaip Street, Menasha, Wis.

Executive Office: Asher Hobson, Secretary-Treasurer,
University of Wisconsin, Madison, Wis.

Editorial Office: O. B. Jesness, Editor,
University Farm, St. Paul, Minn.

Price: $5 per year, this issue $1.25

Entered as second class matter at the post office at Menasha, Wis. Acceptance for mailing at a special rate of postage provided for in the Act of February 28, 1925, paragraph 4, section 412, P. L. & R., authorized November 27, 1931.

The American Farm Economic Association

President—W. E. Grimes, Kansas State College

Vice-Presidents—Leland Spencer, Cornell University; W. C. Waite, University of Minnesota.

Secretary-Treasurer—Asher Hobson, University of Wisconsin.

PAST PRESIDENTS

William J. Spillman	1910–12
George F. Warren	1913
Daniel H. Otis	1914
Andrew Boss	1915
Harcourt A. Morgan	1916
Henry W. Jeffers	1917
George A. Billings	1918
John R. Fain	1919
Henry C. Taylor	1920
Walter F. Handschin	1921
Benjamin H. Hibbard	1922
Thomas P. Cooper	1923
Edwin G. Nourse	1924
Milburn L. Wilson	1925
Thomas Nixon Carver	1926
J. I. Falconer	1927
L. C. Gray	1928
H. E. Erdman	1929
H. C. M. Case	1930
O. C. Stine	1931
J. D. Black	1932
H. R. Tolley	1933
W. I. Myers	1934

THE JOURNAL OF FARM ECONOMICS, EDITORIAL STAFF

Editor—O. B. Jesness, University of Minnesota.

Associate Editors—H. E. Erdman, University of California.
F. F. Lininger, Pennsylvania State College.
S. W. Mendum, Bureau of Agricultural Economics.
H. B. Price, University of Kentucky.
W. C. Waite, University of Minnesota.

Published at 450 Ahnaip St., Menasha, Wisconsin. Inquiries regarding membership and general affairs of the Association should be addressed to the Secretary-Treasurer, Madison, Wis. Manuscripts or inquiries concerning the Journal should be addressed to the Editor or any one of the Associate Editors.

JOURNAL
of
FARM ECONOMICS

VOL. XVII AUGUST, 1935 No. 3

INTENSITY OF LAND USE AND THE RESETTLEMENT PROBLEM IN MISSOURI

CONRAD H. HAMMAR AND JAMES H. MUNTZEL[1]
UNIVERSITY OF MISSOURI

Prominent in the recent writings of Secretaries Wallace and Tugwell and of others in the official group at Washington has appeared the term "resettlement." The presumption persistently underlying the reference to resettlement has been that in a controlled or semi-controlled economy we shall be able to do a better job of settling people upon the land than has been possible under a laissez-faire, capitalistic system. The low levels of farm incomes in the great areas of self-sufficing farming in the United States have apparently been one of the factors provoking this desire to resettle, but the dire circumstances of farmers in cut-over regions and in drought areas of great dry-farming sections are equally provocative.

A challenge to the validity of competitive economics is involved in these resettlement proposals. Men, in the future, are apparently not to be regarded as able without governmental direction to select the land they shall operate for farming. The question arises, however, can the Government do a better job, and in a study directed toward the answer of this question there are apparently two phases. The first of these is descriptive and seeks to discover indices or measures of the relationship of population to surface land resources. The second seeks means of improving these relationships in the interests of greater production and higher standards of living in all areas. The present article is almost wholly concerned with the first or descriptive phase and to the situation within a single state—Missouri.

[1] Contribution from the Department of Agricultural Economics, Missouri Agricultural Experiment Station, Journal Series No. 430. The authors wish to acknowledge the kindly and intelligent counsel offered during the preparation of this paper by Mr. Glen T. Barton and Mr. E. A. Mayes of the research staff of the Missouri State Planning Board.

The study of the effectiveness of settlement involves an analysis of the entire problem of intensity of land use. Students in economics are told that extensive and intensive margins of land use are merely different aspects of the same thing. The extensive margin refers to the application of a known quantum of labor or capital to the lowest grade of land in successful use for a particular purpose. The intensive margin, on the other hand, refers to that last increment of capital or labor applied to a particular grade of land, the return to which will no more than cover its cost. Thus, the return to a given amount of either labor or capital is the same whether applied at the extensive or intensive margin. The mobility of labor and capital is presumed to be sufficient so that this equality tends persistently to be maintained.

To the student of agricultural economics this concept of intensity has meant that normally one should discover a greater application of labor and capital to excellent land of high productivity and a much lesser application to land of a much poorer grade. Objective tests of the concept have seldom been offered and the student is often confronted with data which seem flatly to contradict the principle or hypothesis.

Measures of Intensity of Use

For instance, in Table 1, the crop land per male worker, 10 years of age and over, upon lands of varying quality in Missouri, reveals no tendency for a heavier application of labor to lands of high quality as contrasted with those of low quality. Indeed, the tendency is quite obviously in the other direction. Thus, upon the

TABLE 1.—MEASURES OF THE INTENSITY OF LABOR APPLICATION TO LANDS OF VARYING QUALITY IN MISSOURI, 1930

Class of Lands*	Total Nitrogen per Farm (Pounds)	Acres of Crop Land and Plowable Pasture per Male Worker 10 years of Age and Over	Surface Soil Nitrogen (Entire Farm) per Male Worker, 10 Years of Age and Over (Thousand Pounds)	Male Farm Workers, 10 Years of Age and Over per 100,000 Pounds Surface Soil Nitrogen (Entire Farm Area)
Class I.....	572,785	88.0	386	.259
Class II.....	444,595	87.8	334	.299
Class III.....	294,000	50.6	211	.474

* The counties chosen to represent Class I, II, and III lands were selected so as to provide a wide range in productivity and at the same time to escape as far as possible urban influences. The type of farming varies somewhat from class to class but is upon all three classes dominantly mixed or general farming. The counties selected were: Class I—Atchison, Andrew, Caldwell, Clinton, Holt and Nodaway; Class II—Audrain, Cooper, Henry, Mercer, St. Clair and Shelby; Class III—Bollinger, Franklin, Gasconade, Osage and Ste. Genevieve. The percentage of land in farms in all three classes is high, somewhat higher on Class I than on Class III.

first class lands of northwest Missouri there is associated with each male worker, 10 years of age and over, 88 acres of crop land and plowable pasture, while on the much poorer lands of the

Ozark Border the acreage per male worker is 50.6. The greater labor intensity in these regions of poorer soils is obvious, but the comparisons involved are unsatisfactory: (1) because not all lands in the farms are included, and (2) because a satisfactory comparison of the quality or productivity of land is difficult. While no perfect measure of the difference in productive capacity of these lands of different quality is readily available, one of the best measures, nitrogen content,[2] can be obtained, and in the third column of Table 1 the nitrogen available per male worker for the entire farm area is given. For the sake of later comparisons the workers per 100,000 pounds of nitrogen have also been calculated. Upon the basis of these nitrogen figures the intensity increases rather than decreases as one passes from Class I, or the excellent lands of northwest Missouri, to Class III, or lands of dubious fertility in the Ozark Border area. In fact, the nitrogen per male worker upon Class III lands is only 54.7 per cent as great as that upon Class I land.

The intensity of land use cannot be measured by the applications of labor alone, however, and in Tables 2 and 3 are afforded certain measures of capital intensity upon these same lands.

TABLE 2.—VALUE OF BUILDINGS, PER FARM, PER CROP ACRE AND PER 100,000 POUNDS OF SURFACE SOIL NITROGEN UPON LANDS OF VARYING QUALITY IN MISSOURI, 1930

Class of Lands	Value of Dwellings			Value of Service Buildings		
	Per Farm	Per Acre of Crop Land and Plowable Pasture	Per 100,000 Pounds of Surface Soil Nitrogen	Per Farm	Per Acre of Crop Land and Plowable Pasture	Per 100,000 Pounds of Surface Soil Nitrogen
Class I.....	$1695	$12.96	$296	$1468	$11.23	$256
Class II.....	1280	10.94	288	978	8.36	220
Class III.....	971	13.17	330	775	10.54	264

In Table 2 the value of dwellings and of service buildings as a measure of fixed capital intensity have been calculated per farm, per acre of crop land and plowable pasture, and per 100,000 pounds of surface soil nitrogen (for the entire farm area). The per-farm figures indicate a declining intensity of application of fixed capital in the value of buildings, but when these same data are put upon a per-acre or per-100,000-pounds-of-nitrogen basis, the declines are by no means as pronounced. Furthermore, the most intensive application of service buildings occurs upon Class III lands of low nitrogen content rather than upon the Class I

[2] Value of land, suggested as a basis for studying variations in intensity of land use in place of surface soil nitrogen content, is ruled out for three reasons: (1) Values are based upon a surplus of income over costs. This surplus is zero at the extensive margin. (2) Values are affected by taxes which vary greatly, from area to area. (3) Speculation and variation in capitalization rates distort values and render them unsuitable measures.

The close relationship between surface soil nitrogen content and productivity of land is illustrated by figures IV and V in Missouri Agricultural Experiment Station Bulletin 324, "Soil Fertility Losses Under Missouri Conditions," by Dr. Hans Jenny.

lands.[3] The data for dwellings indicate so nearly the same situation as those for service buildings that no additional comment upon them is needed.

Capital intensity, however, may also be reckoned in terms of variable or circulating capital and, in Table 3, three measures of such circulating capital have been calculated per farm, per acre of crop land and plowable pasture, and per 100,000 pounds of surface soil nitrogen. These measures of capital intensity indicate somewhat the same situation as that discovered for fixed capital

TABLE 3.—VALUE OF LIVESTOCK, EXCEPT WORK STOCK, AND VALUE OF MACHINERY AND DRAFT ANIMALS PER FARM, PER ACRE AND PER 100,000 POUNDS OF SURFACE SOIL NITROGEN UPON LANDS OF VARYING QUALITY IN MISSOURI, 1930

Class of Lands	Value of Livestock			Value of Machinery and Draft Animals		
	Per Farm	Per Acre of Crop Land and Plowable Pasture	Per 100,000 Pounds of Surface Soil Nitrogen	Per Farm	Per Acre of Crop Land and Plowable Pasture	Per 100,000 Pounds of Surface Soil Nitrogen
Class I.....	$1413	$10.81	$247	$995	$7.61	$174
Class II.....	958	8.19	216	696	5.95	157
Class III.....	662	9.00	225	560	7.62	190

Farm Expenditures*

Class of Lands	Per Farm	Per Acre of Crop Land and Plowable Pasture	Per 100,000 Pounds of Surface Soil Nitrogen
Class I.....	$679	$5.19	$119
Class II.....	368	3.14	82
Class III.....	221	3.00	75

* For feed, fertilizer, farm labor, farm implements, and electric light and power.

as measured by buildings. Thus, in the case of machinery and work animals the intensity of application is greater upon Class III lands than upon Class I lands when the data are judged upon the basis of the nitrogen content of the soil. In the case of livestock there is a corresponding decline from Class I to Class II lands, but a rise from Class II to Class III when data are put upon the same basis. For expenditures, however, the decline is continuous from Class I to Class III in each case, regardless of the basis upon which the data are calculated.

In Table 4 intensities of land use as measured by applications of labor and capital per 100,000 pounds of surface soil nitrogen are put upon a percentage (of Class I lands) basis. A study of the

[3] The reliability of these averages is called into question by the great variability of the county figures upon which they are based. The range of variation between these figures for value of service buildings per 100,000 pounds of nitrogen is as follows:

Class of Land	*Number of Counties*	*Range in County Averages*
Class I	6	$304 to $213
Class II	6	333 to 152
Class III	5	346 to 172

This high degree of variability suggests that either a large number of forces are working to produce variations in intensity of these applications of fixed capital or that the adjustment in various areas to the forces that are operating is very inexact.

data in this table reveals that the adjustments in intensity as between Class I and Class II lands are approximately in accordance with the presumptions of competitive economics. To be sure, the intensity of application of labor is greater on Class II than on Class I lands, but this is compensated for by a much smaller application of all four forms of capital.

For Class III lands, the lowest of all in productivity, the situation is very different. Except for expenditures, intensities of use are greater on Class III lands in every case than on Class II lands and the difference even in expenditures is small (only 6 per cent). In three instances, including the all important labor factor, in-

TABLE 4.—MEASURES OF INTENSITY OF LAND USE FOR LANDS OF VARYING QUALITY IN MISSOURI

Class of Land	Value per 100,000 Pounds of Surface Soil Nitrogen of			Expenditures per 100,000 Pounds of Surface Soil Nitrogen	Male Farm Workers 10 Years of Age and Over Per 100,000 Pounds of Surface Soil Nitrogen
	Service Buildings	Machinery and Draft Animals	Livestock except Work Stock		
Class I.....	100.0%	100.0%	100.0%	100.0%	100.0%
Class II.....	85.9	90.2	87.4	68.9	115.4
Class III.....	103.1	109.1	91.1	63.0	183.0

tensities of use are greater for Class III than for the much more fertile Class I lands. There is no satisfactory way of combining these measures of intensity into a single index, and it must remain a matter of judgment whether intensity of use is greater or less upon Class III as contrasted to Class I lands. The greater intensity of application of capital and labor on Class III lands as contrasted to Class II lands, however, appears quite incontestable.

The general implication of Table 4 is that, as between lands of high acceptability for agricultural production, though varying somewhat in quality, the adjustments in intensity are in accord with the idea that heavier applications of capital and, less clearly, of labor will be made on the better lands. For distinctly less fertile lands, or those much nearer the margin of acceptability for agriculture, such measures as have been herein proposed do not seem to substantiate, in fact quite clearly conflict with, such a presumption. These marginal lands are used more intensively than lands of moderate fertility and, almost if not quite, as intensively as the high grade lands.

Settlement in Relation to Soil Types

The foregoing analysis of intensity of use as a measure of the rationality of settlement has been based upon a sample of lands of various qualities. These samples have been chosen with care so

as to exemplify in as satisfactory a manner as possible the various conditions with respect to land use. The fact that the conclusions are based upon samples, however, detracts from their significance and Table 5 has been arranged partly to avoid the necessity for sampling and partly to approach the problem of settlement from a somewhat different angle. By reason of the fact that the 1930 Census reported a considerable portion of its data on the basis of minor civil subdivisions, it has been possible, through a system of estimates subsequently balanced and weighted, to attach to each of the major soil types within the state its quota of farms. Some danger is involved in an attempt of this character, since normal farms in some areas cross soil-type boundary lines. This is notably true with respect to the Huntington loam and the contiguous Clarksville stony loams of the Ozark Highland area, and to a lesser extent in the case of the Wabash, Osage, and Knox silt loams. In fact, this difficulty applies to any soil type but is at a minimum for those types of soil which occur normally in large, broad blocks as contrasted with those which occur in narrow strips, such as is nobably the case for the soils mentioned above. The estimates were first made upon a state-wide basis and later these were adjusted to fit accurately each of the 114 counties into which the state has been divided. Certain tests not offered here were made to check the reliability of the data.

The implications of the figures in Table 5 are in accord with those in Tables 1 and 4, in that no pronounced tendency is revealed for farms to be concentrated upon the better soils. Thus, the first class lands of northern and western Missouri occupy 18.5 per cent of the total land area of the state and contain 19.6 per cent of the state's farms, while the Class III soils of the same region occupy 7.4 per cent of the state's area and account for 8.3 per cent of its farms. Similarly, the second grade lands of this region occupy approximately the same percentage of the total land area of the state and embrace approximately the same proportion of the total farms as do the first class soils.

If inter-regional comparisons are made, by all means the most heavily settled of the upland area (that is, the portion of the state other than the Southeast Lowlands) are the Group II Ozark soils which include the Knox silt loams that flank the courses of the major river channels in the state.[4] These second grade Ozark soils occupy 13.6 per cent of the land area of the state but contain 19.2 per cent of the farms. However, upon Class III Ozark soils there

[4] These lands are Ozark border rather than Ozark highland soils and some areas of Hagerstown, as well as of Knox, are found at some distance from the Ozark border.

TABLE 5.—DISTRIBUTION OF FARMS BY SOIL TYPES IN MISSOURI, 1930
Group I. Lands of high productivity. Group III. Lands of low productivity.
Group II. Lands of moderate productivity. Group IV. Lands, chiefly non-arable.

Soil Type*	Acreage	Per cent in Farms	Per cent Total Total Land Area	Per cent of Total Number of Farms	Surface Soil Nitrogen per Farm
Group I—*North. & West. Mo.*					
Grundy	1,602,284	90.7%	3.7%	3.6%	652,316
Marshall	1,752,219	93.1	4.0	4.1	598,605
Summit	1,600,451	91.4	3.6	4.7	468,718
Wabash	3,145,530	86.6	7.2	7.2	602,695
Group II—*North. & West. Mo.*					
Bates S.L.	1,374,812	82.1	3.1	3.1	348,230
Osage	579,458	85.8	1.3	1.3	494,959
Oswego	1,151,985	93.1	2.6	2.8	467,631
Putnam	2,090,081	91.5	4.7	4.2	531,865
Shelby L.	3,051,793	94.5	7.0	8.2	430,954
Group III—*North. & West. Mo.*					
Cherokee	990,614	92.2	2.2	2.4	347,432
Lindley L.	2,283,308	89.7	5.2	5.9	316,880
Group II—*Ozark Highland*					
Crawford G. L.	2,237,986	82.3	5.1	7.0	212,162
Hagerstown	602,296	86.6	1.4	1.6	210,709
Huntington	1,522,769	91.8	3.5	5.9	205,470
Knox	1,637,893	84.3	3.6	4.7	266,029
Group III—*Ozark Highland*					
Clarksville G. L.	4,484,632	70.3	10.3	8.7	212,886
Hanceville L.	272,074	73.6	.6	.5	234,163
Lebanon	1,580,394	81.7	3.6	3.9	246,551
Tilsit	299,416	76.9	.7	.6	241,531
Union	1,988,305	80.0	4.5	4.2	246,748
Group IV—*Ozark Highland*					
Clarksville and Ashe St. L.	7,369,818	40.1	16.7	7.1	247,297
Group I—*S.E. Lowlands*					
Lintonia L. and Sarpy S. L.	379,592	73.1	.9	2.3	108,989
Group II—*S.E. Lowlands*					
Lintonia S.L.	475,767	83.2	1.1	1.9	140,615
Sharkey Clay	735,741	48.4	1.7	2.6	237,000
Waverly S.L.	227,191	74.0	.5	.6	202,393
Group III—*S.E. Lowlands*					
Waverly	548,871	46.1	1.2	.9	262,182
Recapitulation by Geographic Areas					
North and West Missouri					
I	8,100,484	89.8	18.5	19.6	569,221
II	8,248,129	90.8	18.7	19.6	449,041
III	3,273,922	90.4	7.4	8.3	325,855
Ozark Highland					
II	6,000,944	85.7	13.6	19.2	223,105
III	8,624,821	74.9	19.7	17.9	229,722
IV	7,369,819	40.1	16.7	7.1	247,297
Southeast Missouri					
All	2,367,162	61.3	5.4	8.3	179,766
TOTAL OR AVERAGE	43,985,280	76.7	100.0	100.0	342,625

* Unlabeled soil types are silt loams.
G.L.—Gravelly loam.
L.—Loam.
St.L.—Stony Loam.
S.L.—Fine Sandy Loam.

is a distinct tendency for the percentage of the total number of farms to be smaller than the percentage of land area occupied by the various soil types and for the Class IV Ozark soils (the Ashe and Clarksville stony loams) the deterrents have been so strong

that upon 16.7 per cent of the land area of the state are found only 7.1 per cent of its farms.

The Southeast Lowlands present a special case in that they represent an intrusion of the cotton belt into Missouri. These alluvial cotton lands are much more heavily settled, on the whole, than any other lands within the state, despite the relatively recent induction of a considerable part of them into the class of arable cultivated lands.

While comparisons made among the major land classes as in the paragraphs above are safer, some interesting contrasts between various soil types can also be made with a reasonable degree of assurance. Thus, the productive Marshall silt loam with 4 per cent of the state's land area has 4.1 per cent of its farms, and the much inferior Shelby loam, often lying adjacent to the Marshall, occupies 7 per cent of the land area but embraces 8.2 per cent of the state's farms. Similarly, the Lindley loan, which is much inferior even to the Shelby, is settled quite as heavily, indeed somewhat more heavily, than the Marshall.

A comparison of the Marshall and Lebanon silt loams is even more instructive. As is made clear in Table 6, the Marshall is superior to the Lebanon from almost every standpoint. The nitrogen content of the Marshall is approximately twice that of the Lebanon. In structure, as indicated by the ratio of clay content in subsoil and surface soil, it is excellent and no claypan obstructs root penetration. On the other hand, the productivity of the Lebanon soil is seriously restricted because of an unusually heavy claypan. The Marshall has, furthermore, a high content of HCl soluble bases and is, therefore, suited to the better legumes and is an excellent pasture soil, whereas the Lebanon is so poor in these basic elements that it will scarcely produce even blue grass without being limed. Yet, the Lebanon soils are more heavily settled, considering their entire area, than are the Marshall.

TABLE 6.—INDEXES OF SOIL PRODUCTIVITY

Soil Type	Surface Soil Nitrogen (Pounds per Acre)	Ratio of Clay Content of Subsoil and Surface Soil	Exchangeable Bases (Units)
Lebanon	1920	194%	7.42
Marshall	3810	104%	17.29

Indeed Table 5 is replete with illustrations which show that in Missouri settlement has been made almost exclusively upon an area basis. The only really significant departure occurs in the case of a few soils such as the Knox silt loam, where an urban influence is very important, the Southeast Lowlands where a very different type of farming occurs, and upon the hilly, stony

soils where the deterrents to settlement have been so pronounced that agriculture has never obtained a secure foothold. That is, running the gamut from lands of first class productivity to those essentially upon the margin, settlement has been remarkably uniform and soils of marginal acceptability for agricultural purposes are often quite as heavily settled as are those of genuinely unusual productiveness.

In the last column of Table 5 are given the data for surface soil nitrogen per farm for the different soil types. The variation in nitrogen available per farmer, which under the presumptions of competitive economics should have shown a strong tendency to equality, is all but astonishing, ranging from an average of 569,000 pounds for Class I soils of north and west Missouri to 223,000 for the Class II group of the Ozark Highland, and to the still lower figure of 180,000 in the cotton sections of Southeast Missouri. These results are made even more significant by the tendency of differences in nitrogen to understate rather than overstate differences in productivity. That is, high nitrogen content is normally associated with highly acceptable topography, a high content of the exchangeable bases, a low acidity, and excellence of soil structure. Clearly, Missouri farm lands have been settled in such a manner as to result in great disparities in the average productiveness of land per farm and farmer as between different soil types and regions.

Effect of Types of Farming

The data for this table present in themselves an interesting study in intensity of land use. They make clear, for instance, that type of farming is a very important factor in determining intensity of land use. This is most unequivocally demonstrated by a comparison of nitrogen figures for farms of the southeast cotton sections with those of other areas of the state. The Census reports each cotton cropper's holding as a farm, though in the southeast lowlands area the farm is usually considered as being made up of a number of cropper tracts. However, these cropper tracts are similar to farms in other sections of the state, for they do represent the land area upon which a family resides and from which its living is normally derived. Cotton farming apparently represents a very intensive type of land use.

Apparently also dairy farming calls for closer settlement than meat production. Dairying is much more prevalent upon Summit silt loams than upon other soils of the Class I group of north and west Missouri, and the nitrogen figures per farm upon Summit

soils are notably lower than for any of the other soil types in this same group. Fruit production, which is developed to a considerable extent upon Crawford and Knox soils, seems also to warrant greater concentration of settlement than is true for a great many other types of farming.

While type of farming clearly does affect intensity, just why this should be the case is not so easy to explain. Undoubtedly the root causes are differences in prices that are offered for particular commodities and in certain technical or physical relationships between the type of land use and the intensity with which it may be used. Thus, dairying can under certain circumstances more effectively use a poorer grade of land than meat production, and the prices of meat, as contrasted with those for dairy products, are such as to permit meat production to appropriate areas of highest quality soil in the state leaving out of account the milksheds adjacent to metropolitan areas. A like comparison might be made between fruit production and meat production. The building requirements for dairying may be and often are more elaborate and expensive than for beef production. The capital investment in an orchard is heavier upon a per-acre basis than that needed for meat products, and the discrepancies in intensity in land use are explicable in part upon the basis of these technical factors.

The urban influence upon intensity is, of course, a notable feature and has had obvious effect in the case of such soils as the Knox and to a smaller extent the Summit and Crawford.

Other Variables Affecting Intensity of Use

The factor of management has in no way, in the above tables, been taken into account in measuring intensity. High class lands will attract high class farmers, according to the hypothesis of Henry C. Taylor. Thus, referring to Table 4, a greater application of management upon Class I contrasted with Class II lands might be said to compensate for the greater intensity of labor that is applied to Class II lands. It is quite possible that the management complement of land is more nearly proportional to its surface area than to its productive capacity. That is, 160 acres of good land may be no more difficult to manage than 160 acres of poor land. In fact, many reasons lead to the belief that poor land may be even more difficult to manage, and one of the reasons for the tendency for settlement to be made upon an area basis may reside in the fact that management is the limiting factor.

Somewhat akin to the management explanation of differences in intensity is that of the standard of living. Certain classes of

people may be willing to settle land more heavily because their living standards are relatively low. Such is presumably one of the important explanations for the heavy settlement in southeast Missouri. Some people are prone to apply the concept also to the Ozarks, though very surely no definite measures of willingness to accept a low standard of living have ever been served as an indictment against Ozark people, and such explanations should be used with utmost caution and circumspection. It remains true, however, that as far as material standards of living are concerned, areas of cheap land have a tendency to attract those who place a smaller premium upon material comforts than is found in areas of better lands. Thus, certain portions of the Ozarks may be settled by people who place a great premium upon hunting and fishing and the so-called "independence" of farm life. Furthermore, these cheaper lands also attract people who move upon them from the cities to escape high living costs and the necessity for receiving charity. There is no opportunity for such people to appropriate better grades of land. They can and do occupy Ozark farms.

A further factor of great importance is the degree to which farm products are processed upon the farm or the degree to which farming is self-sufficient. This explanation, it should be recognized, is somewhat akin to the type of farming explanation as given above. Thus, upon one farm the processing of raw materials may be carried essentially to its completion, while upon other farms these processes are dropped at relatively early stages and the raw materials are sent to cities and towns for further refinement. In such cases the measures of intensity, as offered herein, are unfair to areas of self-sufficing farming. The Ozark farmer and those upon Class III soils generally (as in Tables 1 to 4 inclusive) often carry their processing of farm products to the finished stage. In other words, those who work in the mills and in the packing plants contribute far more to the farming of the excellent land areas with a large quantity of products to market than they do to the farming of the areas which have lesser marketable surplusses and who supplement their labor in the fields with a large amount of labor directed to the preparation of commodities for home consumption. The number and percentage of abnormal farms, most of which will fall in the self-sufficing category, are given in Table 7 for Class I, II and III soils.[5] Upon a percentage basis there are twice as many self-sufficing farms upon Class III lands as upon Class I lands. To the

[5] Classes as in Table 1.

extent that the measures of intensity offered have failed to reflect these differences in self-sufficiency, they have failed to give an accurate picture of the differences in intensity.

TABLE 7.—PERCENTAGE OF SELF-SUFFICING FARMS UPON LANDS OF VARYING QUALITY IN MISSOURI, 1930

Class of Lands	Total No. of Farms	No. of Self-Sufficing Farms	Percentage of Self-Sufficing Farms
Class I	12,335	421	3.4%
Class II	13,510	537	4.0
Class III	10,032	639	6.8

Finally, there is the matter of the historical stage of development. Lands may be intensively used merely because they have been farmed much longer than have other lands, and because settlement upon them has attained a much greater degree of maturity. This factor is of some importance in the Southeast Lowlands. Here certain soils, notably the Sharkey clay loams, have only recently been opened up for settlement by drainage. It is an essentially unimportant factor in other regions of the state. Indeed, a consideration of it, assuming that measures could be found, would only increase the difficulty in explaining differences in intensity and concentration of settlement. That is, the Ozarks are apparently oversettled, but settlement upon them, with the exception of the Southeast Lowlands and possibly certain of the bottom lands along the Missouri River, has been the least recently completed.

Conclusion

The fact that a great many relevant factors were not taken into account in the tables above modifies the effectiveness of the data of Tables 1 to 5 as measures of the intensity of settlement. The wide degree of difference in resources available to each farmer as revealed in these tables, however, leaves a strong presumption in favor of the conclusion that Missouri has not been settled by "economic men," fully informed of the productive qualities and capacities of the land they were selecting. Also, a strong presumption favors the idea that a whole host of institutional factors, such as the persistence of the idea that the 160-acre farm is the proper size, have motivated farmers in their selection of their farm unit. The competitive concept of intensity of land use appears to be a somewhat inadequate one upon which to base any thoroughgoing explanation of differences in intensity.

May one derive from these data the conclusion that much would be gained by revising the pattern of settlement in Missouri upon

a much more informed and reasoned basis? Indeed, there is basis for the belief that much might be accomplished in improving the productive power of the average Missouri farmer by the revision of the land use pattern to secure a greater equality in productive resources available to each of them. Huge areas in the Ozarks might be abandoned and the farmers upon them resettled upon more fertile areas of northern and western Missouri and the quantum of fertility and productivity on the average raised greatly above that with which these Ozark farmers now labor. Assuming that they might move their capital equipment with them, the total volume of production would be increased by such a move.

That such a move would be desirable, however, is open to serious question. In the first place, there is no reason to believe that we need the additional production of agricultural products which should result and much reason, considering the program of the AAA, to believe that we do not. In the second place, indications are that the farms upon the superior lands are, if anything, too small rather than too large, and to make them smaller would be to force upon the inhabitants of these better lands a lower standard of living. Furthermore, no evidence suggests that the farmers upon the better lands are not operating their farms well and they may even be producing a maximum per-capita surplus of farm products for sale upon the consuming markets under their present mode of production. Fourth, there is not only the immense difficulty of moving such people and getting them accepted by communities in the better land areas, but there is the additional difficulty that many of these farmers upon poorer lands have come there because of choice and because the type of operations which they perform upon them suit their training and capacities. That is, farmers from the poorer lands might make a relatively poor record of achievement if moved to these better lands.

Finally, there is the pertinent fact that many of the resources associated in Missouri with the poorer lands are more worthy of intensive development than the better agricultural lands. Such is particularly the case in the Ozarks where a great program of recreational development might be inaugurated and where minerals, water power, and timber resources meet in intimate concourse. The demand for the products and services of recreation, mining, power, and industry is much more elastic than that for the totality of farm production. The conclusion, therefore, that the people upon marginal agricultural lands should be resettled

in areas of better agricultural land appears questionable as far as Missouri is concerned. A more acceptable program appears to be one of more coordinated development of the distinctly precious resources so commonly associated with lower qualities of agricultural land, the need for which in the future living standards of the United States seems to be even greater than for an increased volume of farm products.

SIGNIFICANCE OF THE OWNERSHIP PATTERN TO LAND USE PLANNING[1]

ROLAND R. RENNE
MONTANA STATE COLLEGE

Shifts and adjustments in the use of land must be made to adapt American agriculture to the changed conditions confronting it. To do this in an orderly and efficient manner, the cooperation of landowners must be secured. In many cases the adjustments to be most effective, necessitate changes in the ownership pattern or the control of the lands. Thus, the pattern of ownership is a particularly important factor in determining both the character and success of the land use planning program.

Maladjustments in the use of land, while not confined to any given areas or region of the United States, seem to be particularly acute in the western Great Plains area. The problem of working out an effective land use program in this region is particularly complicated because a large proportion of the land is broken up into a myriad of separate absentee-owned properties scattered in shotgun fashion. This condition is largely the result of our earlier policy of planless settlement.

Development of Present Ownership Patterns

Apparently, the compelling idea behind 150 years of federal land policy was to get into private hands the vast area west of the Alleghenies, and later, west of the Mississippi. This policy, it was believed, would serve both private and public interests advantageously. It would build up individual farm businesses and the resulting increase in *taxable wealth* would enable more revenue to be secured for the support of local, state, and national governmental services. Consequently farm, forest, and range country was parcelled out to homesteaders (would-be farmers and stockmen), investors, speculators, etc., without much knowledge or question of the nature of the land or its best use. Experience has since taught us that this policy was poorly fitted to serve either private or public interests.

When it became generally appreciated that the 80 acres or a quarter section granted under the original homestead act of 1862 was too small to be an economical unit for either dry farming or range use in the west, it was felt that merely increasing somewhat the size of the free homestead would solve the problem. Units of

[1] Contribution from Montana State College, Agricultural Experiment Station. Paper No. 55, Journal Series.

320 and 640 acres were granted under the enlarged homestead act of 1911 and the stock-raising homestead act of 1916, respectively. While this legislation was a move in the right direction, experience has proved that its chief weakness was that it did not go far enough. In other words, even these increased acreages were insufficient to give operators an efficient, economical-sized unit.

The coming of the small farmer and the plowing up of the range changed the picture for the big cattle outfits that ran cattle over the range prior to the influx of the homesteaders. In order to continue to operate they were forced either to buy up large acreages to keep the homesteaders out, or to compete openly with them for use of the range. In spite of their desperate efforts to keep their large units intact, most of them failed to do so in competition with the small farmer homesteaders and real estate development enterprises. They could not afford to pay the price the land was commanding for farming purposes and most of them that tried to (excluding those that had large incomes from other sources or large capital reserves) found they could not carry such a large overhead investment. Western cattlemen, on the average, estimate that they cannot afford to have more than about $40.00 per head invested in land. They could, therefore, afford to pay only $1.00 per acre for land with a carrying capacity of one head to 40 acres, which grade is typical of much of the western range country. The land commanded a much higher price than this, particularly during the first few productive years which followed breaking the sod. Unable to buy up the lands, the stockmen in desperation competed among themselves in bidding for use of what private range was available for leasing, and appropriated and overgrazed whatever public land was available.

The lands were cut up into thousands of small tracts by homesteaders taking up 80, 160, 320 or 640 acre pieces under the various homestead acts. But they were cut up still more by thousands of eastern speculators buying land in 40-acre, quarter, or half-section units in the belief that land values would rise through rapid settlement and development, or through discovery of oil and valuable minerals. These and many other factors have influenced the settlement and use of western lands, until today the ownership pattern of much of this part of the United States may be described accurately as follows: Thousands of tracts owned by individuals residing all over the United States; thousands of small farm units interspersed among grazing areas and other ownerships; a large proportion of the remaining public domain occurring in isolated, disconnected tracts, many of them as little

as 40 acres; state holdings scattered, usually including the 16th and 36th sections of each township, but frequently one-half or one-fourth of these sections sold on contract or sold outright to farmers and others; thousands of acres of county lands, taken through continued tax delinquency and occurring haphazardly in small units; railroad lands making a checkerboard effect in some areas, and much more scattered in others; insurance company holdings scattered thinly here and there; investment and mort-

FIGURE 1. Ownership pattern of Musselshell County, Montana, in 1934. This county is divided into 3423 different tracts and shows the results of planless settlement.

gage company lands strung out in a disorderly fashion, representing for the most part parcels out of larger blocks still unsold; lands foreclosed by land banks and commercial banks occurring at random here and there—such is the pattern of ownership established under a policy of "laissez faire," free individualism, and planless settlement.

An example of the above pattern is shown in Figure 1. This ownership map of the county used as an example is not an exaggerated case but is rather typical of much of the western Great Plains area. The total acreage in this county is 1,196,640 acres and at the beginning of 1935 this was divided into 3423 different tracts or an average of a little more than a half-section (349.6 acres) each. The number of tracts owned by each of the principal public, corporate and private individual agencies, and the aver-

age size of these tracts are shown in Table 1. Note particularly the large number of tracts held by individuals residing outside the state (38 per cent of the total) and the smallness of the average acreage in these tracts. Note also the large number of tracts held by the county, indicating the extent of land use maladjustments and corresponding tax delinquency. Compare the average size of the tracts with the acreage necessary to comprise an economical unit (about 8,000 acres with average grades of grazing lands).

TABLE 1.—LAND OWNERSHIP BY TYPE OF AGENCY IN MUSSELSHELL COUNTY, MONTANA, 1934

Type of Agency	Number of Separate Tracts	Number of Acres	Average Acres per Tract
Public Agencies:			
Federal	199	41,170	206.9
State	88	61,340	697.0[a]
County	347	118,463	341.4
Corporations:			
Railroads	213	140,040	657.5
Investment and Mortgage Co.	114	51,670	453.2
Commercial Banks	68	38,490	566.0
Insurance Companies	15	13,510	900.7
Land Banks	114	42,485	372.7
Miscellaneous Corporate Groups (Principally sheep and livestock companies)	68	30,970	455.4
Private Individuals:			
Residents of Montana	902	288,612	320.0
Non-Residents of Montana	1295	369,890	285.6
TOTAL	3423	1,196,640	349.6

[a] Many sections in this county contain as high as 1280 acres due to survey irregularities (see Figure 1).
All data are as of the first Monday in March (the date set by law for assessment of property for tax purposes each year in Montana).

Less than 27 per cent of the lands of the above county is owned by those operating or living on the lands. For the entire State of Montana only 41 per cent of the area, excluding National Forests and Parks, is so owned. This high degree of absentee landlordism, combined with the myriad of separate properties illustrated in Figure 1, shown the extent to which western lands have been split up by homesteaders, investors, and speculators, and the seriousness of the resulting social and economic problems involved.

Relationship Between Present Ownership Patterns and Existing Maladjustments

With such an ownership pattern as that indicated above, economic instability, overgrazing, and general misuse of the lands occurs. In the first place the holdings are too small for efficient use of the lands either for farming or grazing. For example, lands in Montana which produce, on an average, less than 12 bushels per acre under summer-fallow (the land producing a crop every alternate year) are distinctly submarginal for grain farming. An analysis of 12 representative counties of the state shows that

only 34 per cent of the land in these counties is farm land, the balance being classed as grazing land (54 per cent), undifferentiated bottom land (7 per cent), and mountains and forests (5 per cent). Of the farm land, 35 per cent is of a type which will not average 12 bushels per acre, or what is called fourth grade farming land, and is submarginal for grain production. In one of these 12 counties, 83 per cent of the farm land is of this grade, and in 4 others more than two-thirds of the farm land falls in this category. Another 30 per cent of the farm land in these 12 counties is third grade farming or land which produces, on an average, with alternate summer fallow and crop, between 13 and 18 bushels per acre. This grade is on the border line as to best use between farming and grazing and if national policy dictates a permanent restriction of wheat output, much of this grade of land should be returned to grazing. Only one-third of the farm land in the 12 counties analyzed is therefore of a grade which will, on the average, return a profit to the operator from wheat production, and then only in case the operator has an acreage sufficient to permit economical operation. Studies show that a minimum of about 700 or 800 acres of this grade of land are needed under a summer-fallow system to insure economical operation, and a larger acreage is very desirable. Most of the farmed tracts in Montana are considerably smaller than this.

The size of the tracts existing under present ownership patterns are far too small to constitute economical range units. Studies of the Montana Experiment Station show that a minimum unit of about 200 head of cattle are necessary to enable an operator, entirely dependent on this enterprise, to secure an income above a bare subsistence level. With the soil characteristics and carrying capacity typical of much of the western range, a minimum of 40 acres or more of range per head is necessary. In an analysis of 12 representative counties of the state approximately half of the grazing lands were of this grade or poorer.[2] In other words, the minimum individual range unit, unless accompanied by supplementary feed from grain or irrigated farming, requires about 8,000 acres or more than 12 sections. Contrast this with the acreages granted under the various homestead acts.

Most cattlemen, in order to secure an economical range unit,

[2] The Montana Experiment Station has divided Montana grazing lands into five grades, according to grass cover or livestock carrying capacity, based on the number of acres necessary for a 1,000 pound steer for a ten months' grazing period. These grades are as follows: 1st grade, 18 acres or less; 2nd grade, 19 to 27 acres; 3rd grade, 28 to 37 acres; 4th grade, 38 to 55 acres; and 5th grade, 55 acres or more. An analysis of the grazing lands of 12 counties (Blaine, Cascade, Custer, Golden Valley, Musselshell, Petroleum, Phillips, Sheridan, Teton, Toole, Valley, and Wheatland) shows the percentage of the total grazing acreage in these counties is distributed in each of the grades as follows: 1st grade, 7.8 per cent; 2nd grade, 19.3 per cent; 3rd grade, 23.9 per cent; 4th grade, 23.5 per cent; and 5th grade, 25.5 per cent.

have found it necessary to lease tracts surrounding their ranch headquarters or wherever pieces are available for leasing. In most cases it is not possible to purchase (at prices cattlemen are able to pay) the required acreage in one block or two or three blocks. The lands are too scattered among different owners, some of whom wish to sell at a given price, others of whom do not. Even though lands can be purchased occasionally in one block for prices cattlemen consider reasonable, the annual taxes on such lands are frequently so heavy as to be virtually confiscatory in poor years. These high taxes are largely the result of an overdevelopment of local government. The early favorable conditions misled the settlers into believing the western, semi-arid region was very similar to the more humid areas from which they had migrated, and they established the same community structure of county governments, schools, roads and other services with which they were familiar in the middle west or east. Taxes necessary to pay for such services make the tax rate per acre too high, particularly on grazing lands. In most instances cattlemen find it as cheap or cheaper to lease lands as to own them and pay the taxes.

Leasing from widely scattered, usually unknown owners, however, puts the operator in an uncertain position. He has no assurance from year to year that he can maintain intact his entire operating unit, or that the land will not be sold out from under him as it were, or that his leases will not be raised by the desperate competition of neighboring cattlemen who have lost part of the range which they were accustomed to use and to which they had built up their cattle numbers. This insecurity does not make for planned use of the range, but encourages severe overgrazing and misuse of the lands. Today much of the west is dotted with abandoned farms or laid waste by depletion of forage cover and erosion brought about through overgrazing or the plowing of many acres submarginal for farming. Much of the land has lost at least half of its carrying capacity for many years to come.

Maladjustments in the use of western lands are increased in the second place by the fact that there is no adequate market for the sale of county or other lands, and only the better parcels and strategically situated ones are leased. Much of the remainder is used by any and all who can appropriate it, thus increasing overgrazing and the depletion of productiveness. The continued absence of these lands from the tax rolls places an increased tax burden upon the private lands which remain taxable. Thus with soaring taxes added to his burden of drought and grasshoppers,

the farmer is goaded into more and more drastic exploitation of these ostensibly unappropriated lands.

The Correction of Present Maladjustments

The correction of present maladjustments in the use of western lands depends primarily upon the grouping or blocking out of these small, uneconomical-sized parcels into units of proper size, adequately controlled to improve and stabilize productivity. The thousands of owners of small tracts are scattered all over the United States and these numerous individuals (or their agents), with different ideas, backgrounds, and interests, must all be contacted by one means or another, informed of the problems involved, and convinced of the necessity and proposed means of improving the control and use of the land. Dealing with thousands of different owners slows up the adoption of a planned land use program, increases its cost, and necessitates additional compromises and adjustments.

How can the lands best be blocked out and controlled for maximum productivity? The consolidation of farms by the more successful farmers taking over lands abandoned by their less successful neighbors is one method by which the evils resulting from a faulty ownership and utilization pattern can be overcome. It is the natural consequence of the stern law of the survival of the fittest, however, and does not represent any planned group action. Moreover, it is a slow and painful process and is especially inadequate to cope effectively with the land use problem in the face of so many scattered, individual tracts.

Where the ownership pattern is not too badly speckled with small absentee-owned parcels belonging to dozens of out-of-state owners, as well as insurance companies, banks, mortgage companies, etc., or with units belonging to small diversified farmers, grain farmers, sheepmen, small cattlemen and large ranchers so that there is no common interest between different private users of the land, resident ranchers can form cooperative grazing districts and successfully acquire control of a given area of land for range use. In other words, two prime requisites for the successful adjustment of land use problems by this method are: (1) A comparatively simplified ownership pattern, and (2) a comparatively uniform type of agriculture in order that a common interest exists between different private users of the land.

In areas where federal lands comprise a fairly large proportion of the total, organization of the areas into grazing districts to be

administered by the Department of the Interior according to the provisions of the Taylor grazing act, constitutes an effective method for blocking out and controlling the use of the lands. A liberal use of the exchange clause by which privately owned lands are exchanged for isolated or scattered public domain land elsewhere, will permit blocking out comparatively large areas for economical administration. However, in many counties where land adjustment problems are acute, less than 10 per cent of the total area is federal land. In one Montana county where the problem of maladjustments resulting from a faulty ownership and use pattern are probably more acute than in any other county in the state, only 3.4 per cent of the total land area is federal land. In such areas, this third method (Taylor grazing districts) is not an effective means of removing the existing maladjustments.

A fourth method which is particularly applicable in areas where the ownership pattern is especially badly checkered with small, absentee-owned parcels, and a varied type of agriculture exists so there is no common interest between different private users of the land, is the outright purchase of a sufficient number of the numerous small, privately owned tracts to block out economical units. The only agency with funds and power sufficient to do this for any large areas in the different states is the Federal Government.

Recent Progress in Land Use Planning and Control

Progress in land use planning and correction of present maladjustments in the western Great Plains area is taking place by all of the above methods. In some areas the consolidation of farms has been an important contributing factor in blocking out the small uneconomical-sized tracts into efficient operating units. This is particularly true in Montana where the total number of farms in the state was 10,000 less in 1930 than in 1920, and the average acreage of crop land per farm increased from 152 to 240 or 57.9 per cent. In the northeastern and north central portions of the state covering 16 counties which contain approximately two-thirds of the wheat acreage of the state, the crop land acreage per farm increased from 167.5 in 1920 to 328.2 in 1930, or 95.9 per cent. The adaptation of summer-fallow tillage methods and improvements in the tractor and the combine, have increased the size of the grain enterprise which comprises an economical unit of operation.

In each of the other states in the western Great Plains area (Kansas, Nebraska, North Dakota, South Dakota, and Wyoming)

the number of farms increased from 1920 to 1930, but the average size of farm increased in every case except South Dakota. In Wyoming the average acreage per farm almost doubled (95.9 per cent increase). In all six states in this area the average acreage of crop land per farm increased from 1925 to 1930, the increase being 34.7 per cent in Montana, 22.1 per cent in Wyoming, 9.7 per cent in North Dakota, 8.9 per cent in South Dakota, 7.3 per cent in Kansas, and 5.0 per cent in Nebraska.

The operation of cooperative grazing districts has been distinctly successful in some areas. The Mizpah-Pumpkin Creek Grazing Association, organized in Custer county, Montana in the spring of 1928, was the first cooperative grazing district of its kind established in the United States. The 108,000 acres included in this association are operated by 15 members and the lands are leased from the Northern Pacific Railway Company and the Federal Government (these two agencies own nearly three-fourths of the area) on a 10-year contract. The carrying capacity of these lands has been built up and the range so controlled that the stockmen have stabilized their enterprises and improved the efficiency of their production.[3] In the spring of 1935, 92 cooperative grazing associations in 14 counties of Montana had been incorporated. Many of these are not founded on the proper basis or with the proper conditions. The boundaries of many of these associations overlap and they were established principally in anticipation of controlling private lands and in getting lease rights under the provisions of the Taylor grazing act. Present plans seem to indicate Taylor grazing districts will comprise comparatively large areas rather than numerous small ones. Nevertheless, the large number of grazing associations formed is indicative of the keen interest of ranchers in the problem of effectively controlling the use of the range. This interest should help materially in eventually getting a program effected which will correct the major maladjustments in land use.

Five tentative Taylor grazing districts have been set up in Montana and 2 of these have already been approved to begin operation. Similar districts have also been established in other western states. The withdrawal of the principal public domain regions from private entry provided for in the Taylor act, and the classifying of the lands to determine which are suitable for agriculture, grazing, forestry, reclamation, or other uses, represents a thorough-going change in the federal land policy. Under

[3] For details of the organization and operation of this association see Tootell, R. B. "Grazing Districts—Their Nature and Possibilities in Range Land Utilization," Montana Extension Service Bulletin No. 127, December 1932, or the revision of this bulletin published August 1934.

the act land planning on a state-wide basis is established and a foundation laid for improving the use and control of the range.

In some areas the only method feasible for blocking out the numerous tracts into proper sized units and establishing the control necessary to secure correct utilization of the land seems to be the purchase of many of the tracts by the Federal Government. Eleven purchase projects have been set up in the western Great Plains area (Kansas 1, Montana 3, Nebraska 1, North Dakota 3, South Dakota 2, and Wyoming 1) and thousands of acres of privately-owned and county lands have been optioned to the government. In one Montana county, for example, with a total land area of 1,073,000 acres, the county commissioners have optioned the 105,000 acres of county lands to the government and more than twice this amount has been listed for similar sale by private individuals. Present federal holdings scattered throughout the county total 240,000 acres, leaving less than half the area of the county to be owned by private agencies.

In most cases the new ownership patterns established in areas where federal purchase projects are set up, will probably consist largely of resident farmer holdings along stream bottoms or in irrigated sections, ranch headquarter sites with permanent hay lands fairly well distributed over the area, state lands (these may be traded for federal lands located elsewhere as was done in the Mizpah-Pumpkin Creek District), and the balance federal lands except in those areas where railroad lands occur. In other words most of the area will be owned by only three or possibly four or five different agencies instead of more than a dozen as at present. This consolidation of parcels and centralized control should enable the productivity of the range to be built up and stabilized and the social and economic conditions of the resident operators improved.

ECONOMIC IMPLICATIONS OF EROSION CONTROL IN THE CORN BELT[1]

RAINER SCHICKELE
IOWA STATE COLLEGE

The United States is reaching a turning-point in the historic development of her civilization. She is entering the phase of socio-economic maturity. She emerged from the World War as a creditor nation; immigration had practically ceased by 1930; the birth rate is on the decline and offers the prospect of a stable population by 1970; indications are that the most significant coal, oil and mineral deposits have been discovered; the virgin lumber supply is threatened with depletion in the not distant future; there are no longer vast tracts of fertile prairie land open to new settlement.

All these signs—and there are many more—manifest the end of the era of colonization. Ruthless exploitation and waste of the natural resources are no longer permissible. America is taking inventory of her resources, and is gradually becoming conscious of the necessity for economizing her reserves of producing power. This maturing process involves deep changes in the social attitude and economic behavior of the people.

Erosion control is an important phase of the general policy of conservation evolving out of this maturing process of socio-economic readjustments. In many regions, erosion has reached dimensions large enough to arouse the concern of the individual farmer, the community, and the nation. Society can no longer afford to leave unchecked the rapid dissipation of the soil's producing power. Erosion control has become a public issue.[2]

In the rolling sections of the corn belt east of the Missouri River, much fertile top soil has been washed away during the lifetime of still resident pioneer farmers. Erosion control in this region involves chiefly three methods, besides supplementary technical devices like construction of dams and terraces and various means of gully control:

(1) Complete withdrawal of land from agricultural use by reforestation;
(2) Taking land out of cultivation by seeding it down to permanent pasture;

[1] Journal Paper No. 252 of the Iowa Agricultural Experiment Station, Ames, Iowa. Project No. 431.

[2] "A national land policy should provide for the coordinated mobilization of all efforts, national, state and local, to control erosion." See p. 17 of the report of the National Resources Board, submitted to the President on December 1, 1934.

(3) Reducing the acreage of intertilled crops on the remaining crop land.

The first method applies primarily to land which is either so steep that it should never have been cleared or plowed, or so badly eroded that it is not worth saving for agricultural purposes. This is to say that the first method applies solely to submarginal farm land, and implies all the problems connected with the utilization of such land. Only a small proportion of the agricultural land in the corn belt, however, is strictly submarginal. Hence, this method is of only minor importance in the corn belt.

The second and third methods involve a different set of problems. Since most of the corn belt land suffering from erosion is still strictly supermarginal, increasing the proportion of farm land in permanent pasture, and reducing the percentage of crop land in intertilled crops, chiefly corn, represent the most significant methods of erosion control.

The purpose of this paper is to consider some broad economic problems which arise in connection with erosion control on supermarginal agricultural land in the corn belt. The data upon which it is based were obtained from a farm survey made in the Big Creek Watershed area of southern Iowa and northern Missouri, where one of the 32 demonstrational erosion control projects of the Soil Erosion Service is located.[3] Although the 148 farms included in this survey cover only about 27,500 acres, the general features of their farming conditions and the economic and social forces playing upon them seem to be fairly representative of the rolling sections of the corn belt.

Crop System and Degree of Erosion

As the type of plant cover greatly influences the rate of soil erosion, the problem of erosion control within the agricultural enterprise centers around the readjustment of the crop system to soil conditions. Intertilled crops requiring a carefully prepared seed bed and one or more cultivations during the first stages of growth are particularly conducive to erosion. Hence, the effect of a crop system upon soil erosion on a given farm depends

[3] This survey was made in September 1934, by the Agricultural Economics Section of Iowa State College in cooperation with the Agricultural Economics Department of the University of Missouri, upon the invitation of the U. S. Soil Erosion Service, Bethany, Missouri. The author is greatly indebted to Messrs. J. P. Himmel and Russell M. Hood, who were in charge of the field work, for their keen observations and valuable suggestions. He also wishes to acknowledge the cooperation and constructive criticism given by Mr. R. E. Uhland, Regional Director of the Soil Erosion Service; by Professor O. R. Johnson, University of Missouri; and by Dr. T. W. Schultz, Iowa State College. More detailed information on method, analysis and results of the survey is to be found in the bulletin "Economic Phases of Erosion Control in Southern Iowa and Northern Missouri," by Rainer Schickele, J. P. Himmel and Russell M. Hurd, Agricultural Experiment Station, Ames, Iowa.

largely on the percentage of crop land in intertilled crops. Corn being by far the most important intertilled crop in the corn belt, the percentage of the total crop land in corn will be used as the chief criterion of the crop system.

Each farm covered by the survey has been given an "erosivity rating," indicating the degree of erosion to which the crop land has been subject. The ratings range from (1) for very little erosion to (7) for very serious erosion, the average degree of erosion being represented by a rating of around (4).[4] These erosivity ratings, defective as they are, are indispensable in the analysis of the influence of the crop system and other farming conditions on soil erosion.

With these two criteria, per cent of crop land in corn and erosivity rating, the basic assumption of a significant relation between crop system and degree of erosion can be tested. Eliminating the farms on level land (less than 3 per cent slope) where little erosion occurs no matter how hard it is cropped, it is found from the farms surveyed that the degree of erosion increases closely with the percentage of crop land in corn, from rating 1 with 32 per cent in corn to rating 7 with 46 per cent in corn (see Table 1).

Logically, therefore, all factors which affect the crop system on a given farm also affect the rate of erosion occurring on that farm. The prevailing crop system, however, is in a large measure the result of broad economic and social forces, of general and local conditions, most of which are outside of the control of individual farmers. Conversely, a change in the prevailing crop system, desirable as it may be from the viewpoint of erosion control, is resisted by many of these basic forces. Unless devices are found to overcome the resistance and counteract these forces, there is very little hope for any soil conservation program to attain general adaption and yield permanent results.

There are three outstanding categories of factors affecting the crop system and thereby the rate of soil losses from erosion, and determining the degree of resistance encountered by erosion control practices.

---

[4] The unweighted average of the ratings of all farms falls between 3.7 and 3.8, which suggests a satisfactory accuracy in classifying the farms by their status with regard to erosion. These erosivity rating numbers are composites of two different factors: topography, and present apparent erosion, which have been determined separately for each farm as far as it was possible. In determining the composite erosivity rating, the first factor has been given a weight of approximately two, the second a weight of three. The chief criteria used in appraising "present apparent erosion" are number and size of gullies, sheet deposits of soil on bottoms of hillsides, and outcroppings of subsoil. These ratings have been ascertained by inspection of the farms surveyed, independent from the soil survey of the Soil Erosion Service.

(1) Size and type of farm;
(2) Landlord-tenant relationship;
(3) Debt burden.

To be sure, back of these three groups of factors which are largely beyond the control of the individual farmer, are still broader economic and social forces. Farm size and type of farming have evolved from the history of settlement of the Middlewest, and from the yield and price relationships of the various crops and livestock products. The characteristics of tenancy have been molded by population increase and migration, by speculation

TABLE 1.—DEGREE OF EROSION IN RELATION TO PER CENT OF CROP LAND IN CORN AND FARM SIZE, ON ROLLING LAND

Erosivity Rating	Per cent of Crop Land in corn	Average Farm Size in Acres	Number of Farms
1	32	198	21
2	35	198	23
3	36	199	21
4	35	254	20
5	39	192	20
6	42	176	18
7	46	146	17

in land values, and by the types of farming prevailing in past decades. The debt burden is determined chiefly by the rise and fall of the price level in general, and of the level of agricultural prices relative to industrial prices in particular. These basic forces, however, are immensely complex and too comprehensive to be discussed in this paper. Nevertheless, it is desirable to keep them in mind. They account for many profound maladjustments which lead to the progressive dissipation of soil resources, and seriously obstruct changes in crop systems required to check further erosion.

Farm Size and Type of Farming

Farm size and labor supply are relatively fixed factors to which the farmer adjusts his farming program. He must make a living on his farm, whether he has 80 or 320 acres. His type of farming is aimed at the optimum utilization of his land, labor and capital. In the following the discussion will be focussed upon the utilization of his farm land and labor supply, considering both as relatively fixed factors; the factor capital, especially working capital, is more flexible and is assumed to be more readily adjustable to the other two factors.

The various alternative uses to which the farmer may devote his land have various labor requirements per acre. Pasture repre-

sents the least and corn the most intensive of the major uses of farm land with reference to labor input per acre. Hay and small grains fall in between these two extremes. That is to say, a farmer who has to utilize his labor on a small acreage will tend to have a larger proportion of his land in corn and small grains than a farmer on a larger acreage, who has to keep a larger proportion of his land in such labor-extensive enterprises as pasture and hay.

Similarly, the various kinds of livestock to which the farmer may feed his crop and apply his labor have various labor requirements per animal unit or per unit of output. Sheep and beef cattle require the smallest, dairy cattle and poultry the greatest relative amount of labor. Hogs fall in between these extremes. The farmer on a small farm cannot keep enough beef cattle or sheep to utilize his labor adequately, while a farmer on a large acreage could provide feed for many more dairy cattle than he could handle. We find, therefore, a tendency of the beef cattle enterprise to concentrate in the large size group of farms, of the dairy enterprise to concentrate in the small size group.

The specific bearing of these simple fundamentals on the problem of erosion control justifies their being mentioned at this point. A thirty-per cent reduction in corn acreage on an 80-acre farm involves readjustments in the livestock system entirely different from those resulting from the same reduction on a 320-acre farm. Converting 15 per cent of the crop land to permanent pasture on a small farm has implications very different from those inherent in the same conversion on a large farm. These differences between various farm sizes in the directions and degrees of readjustments necessary to absorb a given change in the crop system are much greater and more powerful than seems to be generally realized.

Some data from the farm survey records illustrate effectively the working of these principles of production economics and their relation to the erosion problem. The beef cattle farms averaged 307 acres in size, the hog farms 160 acres, the dairy farms 142 acres. The combined effect of labor requirements of crops and livestock, and of feed requirements of livestock resulted in 31 per cent of crop land in corn on beef farms, 44 per cent on hog farms, and 37 per cent on dairy farms. The crop systems prevailing in these three types of farming are reflected in the degree of erosion found in the respective farm groups. The beef farms have the lowest rating of 2.7, the hog farms the highest of 4.2, the dairy farms fall in between with a rating of 3.5. (See Table 2.)

TABLE 2.—TYPES OF FARMING IN RELATION TO CROP SYSTEM, FARM SIZE AND DEGREE OF EROSION

Type of Farming	Per cent of Crop Land in Corn	Average Farm Size (Acres)	Erosivity rating	Percent of Gross Income From:			Number of Farms
				Beef	Dairy	Hogs	
Beef Farms[1]	31	307	2.7	55	2	29	23
Dairy Farms[2]	37	142	3.5	10	45	25	23
Hog Farms[3]	44	160	4.2	11	12	64	40

[1] Farms deriving 35 per cent or more of farm income from beef cattle.
[2] Farms deriving 30 per cent or more of farm income from dairying.
[3] Farms deriving 50 per cent or more of farm income from hogs.

The association of hogs and corn represents a combination of a labor-extensive livestock enterprise with a labor-intensive crop system. The association of dairying and hay-pasture[5] represents a combination of a labor-intensive livestock enterprise and a labor-extensive crop system. Both associations, or farm types, are adapted to relatively small farm sizes, since both, particularly the dairy type, absorb profitably a high amount of labor per unit of final product.

The association of beef cattle[6] and hay-pasture represents a combination of a labor-extensive livestock enterprise and a labor-extensive crop system, that is, a combination of two extensive enterprises. This combination or farm type, therefore, requires a large acreage and a large number of cattle to utilize profitably the family's labor supply.

What bearing do these facts have on the erosion problem? Reducing corn and replacing it with hay and pasture implies, by and large, the replacing of hogs with dairy or beef cattle. Replacing part of the labor-intensive corn enterprise with the labor extensive hay-pasture enterprise reduces labor requirements per acre, that is, sets labor free if the farm size remains fixed.

Similarly, replacing hogs with beef cattle sets labor free from the livestock system, particularly as the aggregate amount of feed units, and consequently of animal units, is reduced by replacing the high productive corn crop with lower productive hay and pasture crops. In this case, full labor utilization requires a larger farm size, unless other enterprises are developed to absorb the released labor supply profitably.

In contrast, replacing hogs with dairy cattle increases the labor requirements of the livestock system. Assuming a fixed farm size, shifting from corn-hog to dairying does not release labor. Labor is merely shifted from the crop to the livestock system. This adjustment, purely from the viewpoint of labor utilization, en-

[5] Hay and pasture are complementary feed crops, the one providing winter feed, the other summer feed, and therefore constitute one enterprise under the general conditions of the region in consideration.
[6] Sheep raising represents an even more extensive enterprise than beef cattle raising.

genders no pressure toward increased farm size, but is smoothly absorbed even within the small farm. In fact, the replacement of hogs with dairy cattle is likely to be more complete on the small farms than on the larger farms where, under a soil conserving crop system, the replacement of hogs will tend to occur by expanding both dairying and beef production, the emphasis on the latter increasing with increasing farm size.

Adaptation of Crop System, Farm Size, and Type of Farming to Soil Conditions

To the extent to which the expansion of the dairy enterprise is limited by physical and economic factors determining its comparative advantage, changes in crop and livestock systems necessary for erosion control will inevitably exert pressure toward larger farm sizes, that is, toward farm consolidation. To the extent to which physical and economic conditions allow expansion of dairying, this expansion will tend to occur chiefly on the smaller farm sizes.

The inference from the preceding discussion is that a prerequisite for effective and permanent erosion control is the adaptation of crop system, farm size and type of farming to soil conditions. To illustrate in more concrete terms some possible ways of effecting such adaptation, the general farming conditions in the rolling sections of southern Iowa and northern Missouri may be considered as an example. Here, adaptation may take place in essentially three directions:

(1) Shifting of emphasis from corn-hog to beef cattle enterprise on farms of around 200 acres or more in size; with a slight increase in dairying or steer and lamb fattening, or other supplementary enterprises.
(2) Shifting of emphasis from corn-hog to dairy enterprise on farms of around 160 acres or less in size.
(3) Where expansion of dairying is not feasible; increasing the size of farms now having around 160 acres or less in order to facilitate the shift of emphasis from corn-hog to beef cattle enterprise.

Increasing the farm size by purchasing additional land requires a considerable amount of capital, or the incurrence of new debts, which, in many cases, is undesirable. However, a significant step toward such farm consolidation could perhaps be taken by the government through providing cheap credit for use in increasing the size of farms or buying land from corporate landholders, combining neighboring farms and selling them as larger operating units.[7]

[7] The Bankhead tenancy bill, or similar legislations, may possibly provide the machinery for such a policy. Renting additional land or purchasing corn in order to offset reduction of corn acreage obviously does not solve the problem in the long run.

It is interesting to note that since about 1900 a strong tendency toward larger farm sizes has been apparent in this area. For the last 30 years, the census figures show an increase of over 20 per cent in the average farm size for many counties in the region. It is equally noteworthy that dairy production nearly doubled between 1919 and 1929, and indications are that this increase occurred chiefly on the smaller farms. Both tendencies facilitate adjustments in the crop system to counteract erosion which, however, is still progressing rapidly, as these natural adjustments lag far behind the need for them and are slow and costly in many individual instances.

Northeastern Iowa may be cited as an example of how the crop system and type of farming affect the rates of erosion. Here, topography and soils are highly susceptible to erosion, but the development of the dairy type of farming and the corresponding crop system and soil management has kept down the rate of erosion very effectively. Today, erosion is not a major problem in the northeastern counties of Iowa. The fact that conditions in southern Iowa and northern Missouri do not equally favor the development of the dairy enterprise, renders the task of erosion control particularly difficult.

Landlord-Tenant Relationship

The second major set of factors obstructing desirable adjustments concerns the prevailing character of landlord-tenant relationships. The instability of land occupancy prevents a long-time planning of farm organization necessary for a soil conservation program. A tenant farmer has, in most cases, no assurance that he may stay on the farm for more than one year. He is ready to move to another farm at any given opportunity. He has no incentive to keep up soil fertility. An owner-operator who builds up a permanent home for his family has a direct and persistent interest in maintaining soil productivity, as well as buildings and other permanent improvements.

About 40 per cent of the farms surveyed are tenant-operated. In many sections of the corn belt this percentage exceeds 60. What is more important; the average period of land occupancy by tenants is only between 3 and 4 years, according to the survey records. Ultimately, the time factor is the decisive element of the tenancy problem. A tenant with the prospect of staying on the farm for many years and perhaps of owning it sometime in the future is apt to develop an owner-attitude toward the farm and

the soil. This holds, in general, for tenants with family relations to the landlord.[8] It is the rapidly shifting tenancy mainly which preys upon the soil resources. This frequent shifting from one farm to another characterizes the great majority of tenant farmers in the corn belt.[9]

The length of time a farmer expects to stay on the same farm influences every major decision in the planning of his crop and livestock system and farming practices. Corn is the outstanding cash crop, planted and harvested in one season. The production process in the hog enterprise is of short periodicity; it can be quickly expanded and quickly liquidated. Corn and hogs are the tenant enterprises par excellence; they, too, are the soil exploitive enterprises. Permanent pasture, alfalfa, and other hay and pasture crops require longer-time crop programs. They are not cash crops, and must be fed on the farm chiefly to cattle. The production process in the cattle enterprise is of long periodicity; it takes many years to build up a dairy herd, and silos, stables and other equipment represent long-time investments, and a cattle herd can not be liquidated quickly without risking financial losses. Pasture, hay crops and cattle are owner-operator enterprises par excellence, and are the enterprises promoting soil conservation. The practices of soil improvement and conserving soil management, such as liming, alfalfa, longer rotations and the building up of cattle herds, involve immediate costs and investments the returns on which are distributed over many years. Unless tenants are given reasonable assurance of reaping benefits from such soil conserving practices, they cannot be expected to employ them.

"Since few tenant contracts provide compensation for improvements made by the tenant and since both landlord and tenant are usually interested in the production of cash crops, it follows that in general tenancy is largely responsible for the serious and progressive depletion of soil fertility. We can hardly deal fundamentally with erosion and other types of soil wastage until we bring about a change in the relationship of tenant farmers to the lands they operate."[10]

The length of time an operator stays on one farm is reflected

[8] Only 8 out of 59 tenants covered by the survey are related to the landlord. In the highly commercialized Corn Belt farming these "family" tenants constitute only a minority in the total tenancy.

[9] This rapidly shifting tenancy has some advantages in certain aspects of social and individual developments. It offers a thrifty man a good opportunity, by allowing him to move quickly onto a better and still better farm, to accumulate savings and soon become a prosperous owner-operator of a farm or some other enterprise in the city. Yet, this opportunity is being paid for by future generations, out of the funds of the soil resource, and under certain conditions, for example under conditions of progressive erosion and soil depletion, this price is apt to be ruinously high and may assume the dimensions of indefensible waste.

[10] From statement by Secretary Henry A. Wallace at hearings on the Bankhead tenancy bill, S. 1800, March 5, 1835.

in the crop system. The shorter the operator's stay on the farm, the higher the percentage of crop land in corn tends to be, and consequently the higher the degree of erosion. Table 3 shows 42 per cent of crop land in corn and an erosivity rating of 4.3 on farms operated for 1 to 2 years by the same man, as compared with 30 per cent in corn and an erosivity rating of 2.8 on farms under the same operator for 31 or more years. This illustrates the relationship between rapidly shifting tenancy and highly exploitive farming.

TABLE 3.—OPERATOR'S YEARS ON FARM AS RELATED TO CROP SYSTEM, DEGREE OF EROSION, VALUE OF BUILDINGS AND LAND TENURE

Operator's years on farm	Per cent of Crop Land in Corn	Erosivity Rating	Average Farm Size (Acres)	Number of Farms	Per cent Tenant-Operated Farms
1– 2	42	4.3	166	33	79
3– 5	40	4.2	158	29	62
6–10	39	4.2	168	11	73
11–20	36	2.7	212	21	24
21–30	36	3.9	178	27	
31 and more	30	2.8	234	27	

Within the tenancy situation the specific relationship between landlord and tenant greatly influences the farming program of the tenant and his attitude toward the soil. Eighty per cent of the tenant farms surveyed are leased on a crop-share basis. Forty-two of the 47 crop share leases are strictly one-year contracts.[11] The crop-share lease definitely discourages the development of longer crop rotations and more pasture. The landlord usually is interested in receiving a large corn share, and the tenant must have enough corn left to feed his own livestock, primarily hogs. He is reluctant to go far into longer-time enterprises like dairy or beef cattle on the basis of a one-year lease.

Stock-share leases are less common. They usually are long-term contracts, either by oral agreement or by written time provisions. In many cases, stock-share tenants are related to the landlord. The usual form of the stock-share lease with provisions for equal division of livestock expenses and returns is fairly well adapted to the beef cattle type of farming. For a dairy farmer, this division tends to be unfavorable because of the relatively great amount of labor involved in dairying. If more adequate and elaborate stock-share leases were developed and more widely adopted, the introduction of soil conserving crop systems would be facilitated.

The cash-rent lease, provided the rate of rental payment is in

[11] The remaining crop share tenants operating under longer-term contracts are, with one exception, related to the landlord.

harmony with current prices, is almost neutral regarding soil management and crop system. It neither favors nor discourages directly any particular crop or enterprise. If the rent is too high relative to prices, it may exert a strong pressure on the tenant to crop his land as heavily as possible.

The effect of the three types of leases on the crop and livestock system is indicated in Table 4. Since the samples of cash-rent and stock-share farms are rather small, the data do not present strong statistical evidence of these effects. Yet it is believed that they suggest tendencies which logically may well be, at least in part, the result of the landlord-tenant relationship as determined by the respective types of lease.

TABLE 4.—TYPE OF LEASE IN RELATION TO CROP SYSTEM, INTENSITY OF LIVESTOCK ENTERPRISES, AND FARM SIZE

Type of Lease	Per cent of Farm Land in Crops	Per cent of Crop Land in Corn	Cattle Sold Per 1000 Acres	Butterfat Sold per 100 Acres (pounds)	Hogs Sold per 100 Acres	Cases of Eggs Sold per 100 acres	Average Farm Size (Acres)	Number of Farms
Crop share, 1-year leases.....	67	44	40	543	31	15	193	42
Stock share.....	39	27	63	570	28	12	275	6
Cash rent.....	48	40	44	742	67	23	125	6

The farms leased under one-year crop share contracts show the highest percentage of land in crops (67%), the highest percentage of crop land in corn (44%) and the lowest intensity of dairying (543 lbs. of butterfat sold per 100 acres). Under cash-rent and stock-share leases, the percentage of farm land in crops drops to 48 and 39, respectively. The percentage of crop land in corn drops to 40 and 27, respectively. It is interesting to note that the average farm size of the cash-rent farms is 125 acres, that of the stock-share farms is 275 acres. Correspondingly, the dairy enterprise is most highly developed in the small cash-rent farms (742 lbs. of butterfat per 100 acres), and the beef cattle enterprise dominates on the stock-share farms (63 cattle sold per 1000 acres).

The type of landlord is also reflected in the way the farm is operated, particularly through its influence on the period of land occupancy by tenants. In this regard, three types of landlords should be distinguished: (1) Private landlord, related to the tenant; (2) private landlord not related to the tenant; and (3) corporate landlord (banks or insurance companies). A private landlord generally considers his farm a permanent investment and does not intend to sell it. He is often interested in keeping a good tenant on the farm by providing for a fair distribution of costs and returns and favoring systems of farming that will

maintain the soil. Private ownership tends to insert an element of stability in the land tenure system, or at least allows such an element to develop.

A corporate landlord, however, is inherently a temporary owner, with primarily financial interests in the land, inserting an element of instability in the land tenure system. A corporation is ready to sell the farm as soon as it can get a satisfactory price for it. Hence, it almost invariably rents under one-year contracts. It is interested in the up-keep of the farm only to the extent to which the present market value of the farm is affected. A soil conservation and erosion control program, in general, involves a longer time than a corporation expects to hold the farm.[12] Corporate ownership definitely tends to shorten the average period of land occupancy by tenants.

A program of soil conservation should fully recognize the influence of tenancy upon the management of the soil. Farm ownership by operators should be promoted; landlord-tenant relationships should be adjusted in the direction of longer period of land occupancy by tenants and of more adequate lease provisions regarding the division of costs and returns; and a common interest of landlord and tenant in safeguarding the producing power of the soil should be developed.

Debt Burden

The third major factor soil conservation must face is the effect of debt pressure upon the soil resources.

It should be understood from the outset, that debts represent only one kind of financial pressure on the farmer and his soil. Taxes, and disparities in the price levels of farm products and of products farmers buy are two other kinds of financial pressures with very similar effects on the soil.

A heavy debt burden tends to stimulate heavy cropping.[13] This holds true particularly under the conditions of a falling price level which renders it more difficult to meet the payments of interest and principal amortization. Most of the mortgage debts on the farms surveyed were incurred or renewed before 1920 or

---

[12] In recent years, some banks and insurance companies begin to realize the necessity of maintaining the soil productivity of their farms, because the market for farms has been so depressed for several years that they expect to hold the farms longer, with the hope for reviving land values. Even though this is as yet an exception, rather than a rule, a significant step toward erosion control could be achieved if corporate landlords became more interested in soil conservation and in using leases better adapted to soil conserving practices, since in many townships over one-third of the farm land is held by corporate owners. About half of the tenant farms in the survey are owned by corporations.

[13] A fifty-dollar mortgage on land valued at 100 dollars per acre, is only a light burden compared with the same mortgage on 60 dollar land.

after 1924 when land values were relatively high and agricultural prices on the upgrade. This seems to hold quite generally for the bulk of mortgages in the corn belt. During that time the size of the mortgage did not seem excessive. After 1929, when prices fell rapidly, the debt burden grew in proportion, and the farmer had to sell double and triple the amount of products to meet his financial obligations. He had to squeeze out of his soil whatever he could in order to save his farm from foreclosure. The conspicuous increase in the corn acreage throughout Iowa and Missouri during 1930 and 1932 undoubtedly reflects, in part, this increased debt pressure.

The survey records definitely suggest an influence of the debt burden on the crop system in this direction. The percentage of crop land in corn increases from 32 per cent on farms practically clear of debt to 43 per cent on farms with a mortgage of $51 or more per acre, as shown in Table 5. The percentage of farm land in crops also increases from 51 per cent to 72 per cent with increasing size of mortgage per acre. These data are the more indicative of the effect of debt pressure as they overshadow the influence of farm size on the crop system. The average farm size increases steadily with the debt burden, from 129 acres in the $10-25 per acre group to 203 acres in the $51 or more per acre group. Yet, it has been shown previously, that the relative corn acreage tends to decline with increasing farm size.

TABLE 5.—DEBT BURDEN IN RELATION TO CROP SYSTEM AND FARM SIZE[1]

Size of Mortgage in Dollars per Acre	Per cent of Crop Land in Corn	Per cent of Farm Land in Crops	Average Farm Size (Acres)	Number of Farms
0- 9	32	51	185	52
10-25	31	56	129	22
26-35	37	56	164	25
36-50	40	63	193	29
51 and above	43	72	203	26

[1] Farms taken over by the mortgagee since 1930 are included.

By grouping the farms on rolling land according to their size of mortgage per acre, the relation between debt burden and erosion is strikingly revealed. The erosivity rating increases steadily with increasing size of mortgage per acre, from 3.5 in the group of farms practically clear of debt to 4.6 in the group of farms with a debt load of over 50 dollars per acre. This relation is further substantiated, if we divide the farms into two classes: one with a high erosivity rating of 4.6 for the class average, the other with a low erosivity rating of 2.1 for the class average. The

distribution of the farms of each mortgage-group in these erosivity-classes shows that the higher the debt burden, the greater is the percentage of farms with a high degree of erosion. Seventy per cent of the farms with a heavy debt load of over $50 per acre suffer from serious erosion, while only 43 to 44 per cent of the farms clear of debt, or with only a light debt burden show high erosivity ratings.

TABLE 6.—DEBT BURDEN AND DEGREE OF EROSION, ON ROLLING FARMS[1]

Size of Mortgage Dollars per Acre	Erosivity Rating	Percentage Distribution of Farms with High and Low Degree of Erosion		Total Number of Farms
		High	Low	
0– 9	3.5	44	56	45
10–25	3.5	43	57	14
26–35	4.0	50	50	24
36–50	4.4	59	41	27
51 and above	4.6	70	30	25

[1] Farms whose crop land, in the average, does not exceed a slope of about 3 per cent, are excluded.

These facts impinge directly on the problem of erosion control. Heavy debt burdens tend to force crop land into corn and farm land in general into crops, whether the land can stand it or not. Wherever, and to the extent to which this holds true, the effectiveness of a soil conservation program could be substantially increased by relieving the soil from this specific financial pressure brought upon it by an excessive mortgage indebtedness.

There are several approaches to this problem which could possibly be used alternatively or simultaneously. Individual debt adjustments, refinancing subsidies for interest payments, new credit facilities may be possible ways of overcoming the harmful effects of heavy debt burdens on the soil. In all cases where public funds are involved, the urgent need for erosion control on the respective farm and the discrepancy between the size of the mortgage and the long-time producing power of the farm should be established by disinterested experts, and the farmer should definitely pledge himself to follow a soil conservation program and to submit to a compliance check.

Summary

Insofar as erosion control calls for (a) contraction of the crop land by retiring land from cultivation and putting it into permanent pasture and (b) reduction in acreage of corn and other intertilled crops on the remaining crop land, a series of broader economic and social forces are brought into play, which are large-

ly beyond the control of the individual farmer. It is believed that a clear understanding of these economic factors involved is indispensable for promoting successfully a more general and permanent adoption of erosion control practises.

The main economic and social factors affecting soil conservation may be listed briefly as follows:

Obstructive Factors	*Facilitative Factors*
1. Small farm size	1. Large farm size
2. Corn-hog type of farming	2. Dairy and beef cattle type of farming.
3. Tenancy	3. Owner-operatorship
4. Short-term leases	4. Long-term leases
5. Crop-share leases	5. Stock-share and cash-rent leases
6. Tenant unrelated to landlord	6. Tenant related to landlord
7. Corporate landlord	7. Private landlord
8. Heavy debt burden and high interest rates	8. Small debt burden and low interest rates.

In addition, the level of farm income is likely to influence the rate at which soil conservation practices are adopted. The depression has left many farmers with incomes barely providing for their subsistence. Any policy which raises the general income level of farmers helps to clear the way for soil conservation programs on the farms. The corn-hog program of the AAA doubtless tends to reduce soil losses through erosion, directly by reducing the corn acreage, and indirectly by increasing farm income and relieving the farmer from this tremendous financial pressure which results in heavy cropping and subsequent soil losses. The contemplated long-time feed grain control plan which may succeed the present corn-hog program would have the same favorable effect on soil conservation.

There is another set of economic factors less tangible in nature which impinges upon the erosion problem: Price relationships between the various products concerned and the absorptive capacity of local and national markets for these higher processed commodities replacing corn-hogs. High feed grain prices may tend to obstruct, low grain prices to facilitate erosion control. High hog prices, relative to dairy products and beef cattle prices, tend to impede, low hog prices to foster erosion control. A general adoption of soil conserving farming systems would tend to raise corn and hog prices relative to dairy and beef cattle prices which may induce many farmers to shift back to the corn-hog enterprise. Granted that, regardless of what these price relationships are and will be, erosion control is of vital concern to the future of the

region, these price relationships will set the pace, and, to a certain extent, determine the methods of erosion control.

Types of farming and farming practises are inherited and rooted in tradition. They may persist much longer than physical and economic conditions warrant. There is conclusive evidence that in the erosive sections of the corn belt soil conditions no longer warrant a highly specialized corn-hog type of farming. The urgent need for soil conservation is more and more realized by society as well as individual farmers. They are entitled to whatever assistance technical and economic experts can furnish.

AAA AS A FORCE IN RECOVERY: FURTHER CONSIDERATIONS

WALTER W. WILCOX
RESETTLEMENT ADMINISTRATION

Dr. Davis in his paper on "The AAA as a Force in Recovery," read before the 1934 meeting of the American Farm Economic Association[1] contributed to clear thinking on the accomplishments of the AAA as distinguished from what it was expected to accomplish. This thought-provoking paper and the subsequent discussions stimulated the present writer to examine those quantitative data readily available, to attempt an evaluation of certain quantitative but unmeasurable influences, and raise questions regarding some rather intangible forces. A realistic examination of these unmeasurable factors is needed as a supplement to any evaluation of the AAA as a force in recovery when such an evaluation is based largely on an analysis of readily available quantitative data.

AAA Disbursed Purchasing Power in Advance of Collections

When all the data are considered it is evident that the AAA as it actually functioned, disbursed purchasing power in advance of the collection of processing taxes. It is true that the mailing of benefit payment checks was vexingly slow. This factor, together with the price recessions of July-October 1933 led to pressure for a more rapid way of disbursing purchasing power. The AAA responded with its Commodity Credit Corporation Program.

The Commodity Credit Corporation was set up after conferences with members of Congress and the President. It lists among its officers and directors the Secretary of Agriculture, the Governor of the Farm Credit Administration, and officials of the Reconstruction Finance Corporation.[2] Funds were provided by the Reconstruction Finance Corporation. Loans advanced to cotton and corn growers by this Corporation were made an integral part of the adjustment program by making eligibility for such loans contingent upon agreements to participate in the 1934 production control programs. Banks and other institutions were invited to participate in the program. By making loans on the forms prescribed by and in accordance with the regulations of the Corporation, they were assured that such paper would be purchased by the Corporation at par with accrued interest at any time up to

[1] Published in the JOURNAL OF FARM ECONOMICS, Vol. 17, No. 1, February, 1935.
[2] Agricultural Adjustment May 1933 to February 1934, p. 35.

June 30, 1934 in the case of cotton. Essentially, the same arrangements were made in the case of the corn loans. Loans were made on cotton at 10 cents a pound and on corn at 45 cents a bushel. Interest was charged at 4 per cent.

The loan program on cotton got under way in considerable volume in October 1933. The Corporation began making loans on corn a little later. By January 1, 1934, total loans outstanding amounted to approximately 100 million dollars. It is possible to obtain a measure of the relation of disbursements of purchasing power to collections of processing taxes cumulated monthly, and the trend of this relation, by computing the per cent which the

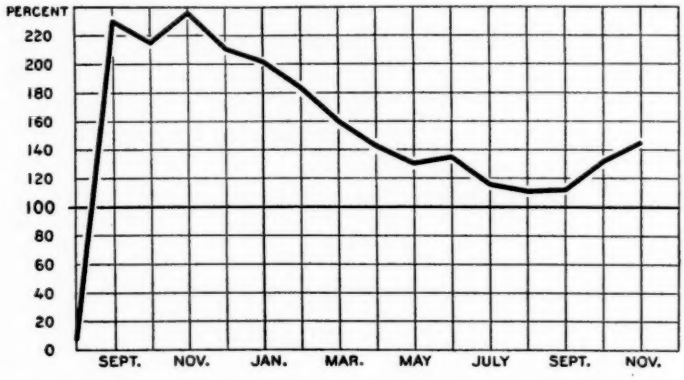

FIGURE 1. AAA disbursements as per cent of tax collections, cumulated monthly, August 1933 to November 1934.

Total disbursements include rental and benefit payments plus surplus removal purchases plus net new additions to corn and cotton loans outstanding—data in table appended to this paper.

former is of the latter. Figure 1 is constructed from such computations. From September 1933 to March 1934 disbursements exceeded collections by over 100 per cent. It is evident that down to November, 1934 total disbursements have been significantly ahead of collections and liquidations at all times. This would seem to be ample to give a net beneficial effect on general recovery.

Unmeasurable Effects of Transfers of Purchasing Power

Variations in "business confidence"—the willingness of entrepreneurs to make future commitments—are usually emphasized as an important phenomenon in the cyclical fluctuation of business activity. Purchases of durable goods of all kinds are usually assumed to expand during the upward swing of business activity, causing the need for and resulting in, an expansion of credit.

Reversal of this process is associated with the downward phase of business activity. Are there reasons to believe that a transfer of 595 million dollars of purchasing power—largely from the consumers to the farmers—during the period July, 1933 to November, 1934, would have an appreciable effect on business confidence?

It seems fairly evident that to the extent that the consumer pays the processing tax it is the consumer of "necessaries"—bread, flour, cotton goods, and pork products. These consumers should be divided into two groups—(1) those employed or in possession of a funded income; and (2) the unemployed, either entirely without funds or in possession of very limited savings. The majority of the population falls in the first group. According to estimates prepared by the Committee on Economic Security 36,906,000 were gainfully employed either full or part-time in 1932 as compared with 12,649,000 unemployed. That Committee further estimates that there were 26,308,000 workers employed either part-time or full-time in nonagricultural industries in 1932. This compares with 36,195,000 in 1929. Labor income paid out by nonagricultural industries in 1932 is estimated at $31,010,000,000. This compares with $51,480,000,000 in 1929.[3] It thus appears that the annual average labor income of part and full-time employees in nonagricultural industries declined from $1,422 in 1929 to $1,175 in 1932. This is a decline of 17 per cent. This does not represent the true situation to the extent that the unemployed and gainfully employed are both members of the same family. In such cases the family earnings have declined more. Actually total labor incomes paid out by nonagricultural industries declined 40 per cent from 1929 to 1932. But had this decline been distributed among all employables, the major portion of the urban relief payments would have been unnecessary.

The decline in the Bureau of Labor Statistics cost of living index for this same period was 20 per cent. It is evident that a large number of families where the wage earners remained in employment were able to command as great physical quantites of goods and services in 1932 as in 1929, or greater. There is another group in which one of the gainfully employed in a family having more than one wage earner lost his job with the result that family earnings were significantly lower. The third group is made up of the families of which no member had employment.

Compare this situation with that obtaining in rural areas

[3] These estimates are taken from Table 15, Senate Doc. 124, 73d Congress 2d Session—National Income, 1929-32.

where the estimated total cash farm income fell from $10,479,000,000 in 1929 to $4,328,000,000 in 1932. This smaller income was divided among approximately the same number of farmers in both years. This decline in income on a percentage basis is 59. The prices of goods bought by farmers declined somewhat, too, but to such a small extent that the farmers' purchasing power in 1932 was only about 64 per cent of what it had been in 1929.

Farmers Heavy Buyers of Durable Goods

Farmers saved 20 per cent of their family incomes in 1929 as compared with savings of 3.5 per cent on the part of nonfarm families receiving incomes of $6,000 or less.[4] Savings in this case included investments in the home, securities, real estate, life and health insurance premiums, and increases in bank deposits. It is evident that this is not an entirely satisfactory measure of differences between the two groups in the purchases of durable goods.

Farmers are entrepreneurs as well as laborers. It is the farm operator who decides whether or not to purchase a new farm implement, repair a farm building or build a new shed. The entrepreneurial function in nonagricultural industries is not vested in the workers except to a minor extent. It would seem on *a priori* grounds that farmers spend a significantly higher proportion of their income on durable goods than do the nonagricultural gainfully employed. The farmers as a group hold a strategic position, second in importance only to the nonagricultural entrepreneurs in making durable goods purchases.

Most People Pessimistic in 1932

Those who remained in employment in 1932 and in the spring of 1933 were in constant fear of losing their jobs. It seems reasonable to infer that their economic confidence was below the 1929 level. They probably had reduced their expenditures for durable goods and new investments. A part of their income was being used to support unemployed relatives. They were endeavoring to save a higher proportion of their total wages than normal because of the uncertainty of the future. Their own purchases were being restricted more closely than usual to food, clothing and shelter.

The unemployed were husbanding their meager savings, spending only for the barest necessities or were being furnished these necessities by their relatives, by charitable and governmental

[4] Estimates of Leven, Moulton and Warburton—"America's Capacity to Consume," page 95.

institutions. They had little economic confidence. Processing taxes collected from this latter group could have little effect on total volume of goods purchased because they already were making only the necessary purchases. In fact by the time the processing taxes were in effect the Federal Government had assumed the responsibility of providing for the physical requirements of many of the unemployed.

During 1932 and the first months of 1933 the farmers saw the prices of their farm products go lower and lower. Corn sold for less than 15 cents a bushel on Iowa farms, and wheat for less than 30 cents a bushel on Kansas farms. Cotton reached the distressingly low price of 5.5 cents a pound in many communities and the value of other farm products had shrunk in proportion. Mortgages and debts did not shrink. Taxes were but slightly lower than they had been. The shadow of the possible dispossession of their farms hung over numerous farmers in every neighborhood. Those farmers who were not in a precarious financial position were thoroughly alarmed by economic developments in their neighborhood. Rural credit institutions, rural merchants and others dependent entirely for their income on agricultural business, became paralyzed with fear. There was no prospect of better prices in the future. The farmers "Holiday Association" was being organized. Rural economic confidence was at a low ebb.

It is estimated on the basis of certain assumptions that the average nonagricultural gainfully employed person may have contributed $8.60 toward payment of the processing tax in a 12-months period. During this same 12-months period the net increase in purchasing power per commercial farmer, disbursed by the AAA, is estimated at $75.[5] These payments were of course made to only a part, estimated at somewhat over one-half, of the farmers. This is in addition to the price raising effects the production control program had on agricultural commodities. All other phases of the AAA program are neglected at this particular

[5] These estimates were arrived at in the following manner: It was first assumed that the processing taxes on pork, 162 million dollars, were not passed on to the consumer. The remaining 432.8 millions of dollars was assumed to be collected from the nonagricultural gainfully employed at a rate 3 times as high as from the unemployed. It was assumed that the gainfully employed in agriculture contributed to the processing taxes as consumers, at a rate twice as high as the unemployed. Thus the unemployed or their supporters contributed $2.83 each in a 12 months period, the gainfully employed in agriculture $5.74 each and the gainfully employed in nonagricultural industries contributed $8.60 each.

The net increase in purchasing power per commercial farmer was computed by adding the total rental and benefit payments plus surplus-removal purchases. This amounts to 660.3 million dollars. From this is subtracted the processing tax paid on pork products and the estimated processing tax borne by the gainfully employed in agriculture as consumers. This totals 221.7 million dollars, leaving a net of 438.6 million dollars. This reduced to a 12 months basis is a 329 million dollar annual increase in the farmers' purchasing power. The monthly average corn and cotton loans outstanding amounted to 118.8 million dollars. This gives a net increase of farmers' purchasing power occasioned by checks written by the AAA of 447.8 million dollars. The 1930 Census reports 6,289,000 farms of which 498,000 were of the self-sufficing type, leaving a net of 5,791,000 commercial farms.

point and only the collection and disbursement of purchasing power is analyzed.

The removal of a fraction of a per cent of the industrial workers' total purchasing power is just as real as though the fraction were larger, but it has little effect on their economic confidence. It in no way makes their jobs any less secure. The additional cost of a few cents on each purchase of cotton goods or the additional fraction of a cent that it might be necessary to pay for a loaf of bread should have no terrifying psychological effect. Without any other change in the economic and social system the industrial worker would continue to feel as insecure as he did but not necessarily any more so.

Is there any reason to suppose that this increase in purchasing power given to the farmers in and of itself increased business confidence? It has already been pointed out that farmers' purchasing power fell after 1929 much more than did the purchasing power of the employed nonagricultural workers. Seventy-five dollars increased purchasing power added to cash farm income less rent and wages paid and interest and taxes payable, represent a 19 per cent increase for the average commercial farm.

The mere fact of a 19 per cent increase from a very low level leads one to raise a question. Is it not probable that such a percentage increase would have an important influence on the recovery of business confidence on the part of the farmer? Add to this the reassuring thought that finally the farmers had enacted on the statute books a farm relief measure on which they could confidently count to continue the benefit payments. Any beneficial effect of the recovery of business confidence on the part of farmers as a result of this transfer of purchasing power would make itself felt by increased purchases of durable goods.

AAA Increased Farmers' Purchasing Power Through Higher Prices

But the benefit payments and the collection of processing taxes were an integral part of something much bigger. The increase in purchasing power made available to the farmers through benefit payments and the economic confidence thus restored was but a part of the direct beneficial effect on general business recovery. The farmers counted on and obtained higher prices and more cash income for the farm products they sold. On farm products entering into international trade, dollar devaluation was an important factor in the recovery of prices. More recently the drought has been an important influence. But this does not mean that the influ-

ence of the AAA program on farm prices was negligible for the period under consideration, July, 1933 through November, 1934. The cotton and corn loan programs were conceived not only to distribute purchasing power rapidly, but also to reinforce the production control programs by supporting the farm price at a higher level than would otherwise have obtained in the early months. They were successful in accomplishing both objectives.

Flue cured tobacco enters largely into export trade and prices might have been expected to react quickly to dollar devaluation. Press reports during August, 1933 give a graphic account of the unsatisfactory prices being paid for the 1933 crop. Unruly demonstrations and protests made by the growers led the officials of North Carolina to close the auctions and insist that the AAA take immediate steps to obtain higher prices for the 1933 crop. The result was a production control program for 1934 and a marketing agreement entered into on October 7, 1933, between the Secretary of Agriculture and the tobacco manufacturers, whereby prices paid to growers for the 1933 crop after that time were raised by 50 per cent and more.

No discussion of the AAA and its program as a force in recovery is complete without some consideration of the marketing agreements promulgated either in connection with production control programs as in the case of tobacco, or without such complementary policies, as in the case of most of the fluid milk marketing agreements. Thirty-five such marketing agreements are listed as having been placed in effect up to February 1, 1934.[6] Seventeen of these agreements covered milk marketings. Three were tobacco marketing agreements. Six covered fruit marketings of one kind or another. The other marketing agreements covered such products as rice, walnuts, olives, peanuts and distilled spirits.

It is impossible to summarize data that are readily available and obtain a reliable estimate of the total increase in farm income ascribable to the AAA program in 1933 and 1934. A detailed consideration of the above elements in the AAA program, the price-sustaining feature of the loans, the price-raising features of the marketing agreements, the general price-strengthening effect of surplus removal purchases, and the reduction in the production of the several commodities leads to the conclusion that the increased farm income brought about by the price raising effects of the AAA was by no means insignificant.

Granting that the AAA has increased farm purchasing power

[6] Agricultural Adjustment May 1933 to February 1934—Page 324.

more than through the transfer made possible by benefit payments, some may still conclude that the higher prices paid for farm products are only another way of transferring purchasing power from one group to another. Is this really the case? The tobacco marketing agreement is a good example. Higher prices were paid to the growers in the fall of 1933. The farmers spent this increased purchasing power in the liquidation of debts and in the purchase of the products of nonagricultural workers. Long before the tobacco for which the manufacturers had paid the higher prices reached the consumer, the farmer and those to whom he had been indebted, took increased quantities of industrial products. The case of automobiles is perhaps the most striking example. Thus the nonagricultural workers were given more hours of employment and more purchasing power out of which to pay the higher cigarette prices. There was a net increase in purchasing power being used in the economic system.

With the exception of fluid milk for retail distribution, day old eggs and similar products, there is a definite time lag between the time the farmer is paid for the product and the time when it is sold to the consumer. During this time higher prices for the commodity are financed by the processors or the credit agencies with which they do business. It is beside the point to argue that price increases may be passed on to the consumer before the crop reaches the market. Processors of agricultural products are always interested in increasing their margins, but they are also interested in moving into consumption the goods they have on hand. They cannot successfully raise prices to the consumers unless the consumers can and will take the stock of goods at the increased prices. Thus any and all price increases to consumers in the fall of 1933 and in 1934 should be analyzed in the light of the factors involved. Most increases in farm prices in 1933 and 1934 may be interpreted as beneficial influences on general recovery through their effect of increasing total purchasing power in the economic system. Farmers expected such conditions to continue.

Not all the farmers were in debt. Less than one-half the farms were mortgaged. It seems reasonable to suppose that the alarming economic conditions in 1932 had stopped a large part of the normal expenditures for durable goods even on the part of those farmers who had or could obtain purchasing power, and that the increased farmers' purchasing power occasioned by the AAA was a substantial factor in influencing a more than proportionate resumption of the flow of purchasing power, other than that con-

tributed directly by the AAA, into durable goods in farm communities.

A comprehensive analysis of all the ramifications of the psychological factor as it was affected by the AAA program would have to take into account the loss in business confidence on the part of the railroads, the packers, and other groups interested in volume of agricultural production. But it would also have to evaluate the gain in business confidence on the part of those selling and transporting construction materials such as lumber and cement, the mail order houses, the farm machinery manufacturers, the automobile manufacturers, and the rural retail distributors of groceries and industrial products who are vitally affected by the size of the farmers' income. In this connection it should be remembered that 43.8 per cent of the total United States population was classed as rural in the 1930 Census. Over 43 per cent of the entire population was living in the open country or in towns of less than 2,500 population. For the most part these people are farm families and those engaged in service trades and industries, inseparably associated with the farmers' economic welfare.

Other Important Unmeasurable Factors

Any careful analysis of the economic situation as it existed in the spring of 1933 and the months preceding will hardly lead

AAA Tax Collections, Disbursements and Percentage Relationship Cumulated Monthly August 1933 through November 1934[1]

	Collections (Million dollars)	Disbursements (Million dollars)	Disbursements as per cent of Collections
1933			
August	13.0	.9	7
September	34.1	78.5	230
October	63.0	135.3	215
November	90.8	213.9	236
December	137.0	288.8	211
1934			
January	180.7	365.2	202
February	215.6	396.0	184
March	251.8	402.5	160
April	285.1	406.7	143
May	328.4	429.5	131
June	371.4	503.0	135
July	414.4	479.3	116
August	455.1	506.4	111
September	495.4	556.9	112
October	550.1	726.2	132
November	594.8	861.3	145

[1] Total disbursements include rental and benefit payments plus surplus removal purchases plus net new additions to corn and cotton loans outstanding. All data except new additions to corn and cotton loans are those compiled by Dr. Davis.

to the judgment that industry was on "dead center" just waiting for a push to start the "upward spiral." The whole economic system seemed to be in a downward spiral. No one knows what the

trend in economic and social events would have been without the emergency measures of which the agricultural adjustment act was one of the first. Important questions may be raised but they cannot be answered decisively. Could dollar devaluation reasonably have been expected to enhance the values of agricultural commodities in the corn belt with sufficient alacrity to prevent further economic demoralization and social unrest in the most important feed and livestock producing region in the United States? Tobacco growers resorted to violence in several instances before the closing of the auctions in North Carolina. Would the farmers' strikes in the Middle West and in market milk areas have developed into serious economic and social disturbances without the intervention of the AAA?

What would have happened to rural credit institutions without the intervention of the AAA? Would the Administration have been willing to undertake its liberal farm credit program, loaning money on the basis of normal—not current appraisals—without some assurance of a workable plan, whereby more nearly normal agricultural prices and values might reasonably be expected to obtain in the future?

FREIGHT RATES AND MINIMUM WEIGHT REQUIREMENTS AS FACTORS IN MIXED CARLOAD SHIPMENTS OF VEGETABLES FROM THE LOWER RIO GRANDE VALLEY

W. E. Paulson
Agricultural and Mechanical College of Texas

Texas stands pre-eminent as a shipper of mixed carloads of vegetables. Of the total volume of such carloads for the United States during the five-year period, 1926-27 to 1930-31, Texas accounted for 24 per cent, nearly one-third more than its nearest rival, California, and the Lower Rio Grande Valley for 20 per cent. The long marketing season and the wide variety of vegetables grown making possible the loading of mixtures suited to the demand of cities ranging in population from 2,000 and even less, to the largest, have given the Lower Rio Grande Valley its high position in this field.

The importance of the mixed carload in the shipment of vegetables from the Lower Rio Grande Valley raises a number of questions. From the standpoint of distribution, what are the advantages to growers, shippers, and receivers of the mixed carload as contrasted with the straight? What relationships have existed as to freight rates and minimum weight requirements as between mixed and straight carloads and what effect have these had on distribution? What seems to be the most desirable relationship of rates and minimum weights between these two types of shipments? This paper seeks to give the answer to these points.

Vegetable growers are concerned with the widest attainable distribution of their produce at the lowest possible cost. Growers in the Lower Rio Grande Valley first became interested in the mixed carload as a means of lowering costs of transportation. The mixed carload was projected as a substitute for the more expensive small-lot express shipments. Markets reached by express would be accessible to mixed carloads at a saving in cost of transportation; an outlay equivalent to that on express shipments would carry mixed carloads to much more distant points.

The mixed carload as a means of distributing vegetables represents a combination of carlot and less than carlot shipments. The role of the mixed carload may best be understood in light of contrasting advantages of these two types of shipments. The less than carload lot, freight or express has an advantage in the matter of adjusting the quantity of shipment in accordance with

demand in markets unable to absorb straight carloads whether this be due to the size of the market, the specific kind of vegetable, or a matter of season of the year. The mixed carload becomes particularly flexible in case a wide variety of vegetables is available from which to make up the load. From the standpoint of a unit of shipment to be handled by the railroad company, the mixed carload takes on the aspects of a straight carload. As for freight rates, those assessed against the mixed carload tend to approach those on the straight carload. Since vegetables, in the main, are perishable in nature, they must be moved under refrigeration if shipped to points other than those close at hand. This suggests the complications of shipping vegetables by freight in less than carload lots. Since, in general, carload lot rates on vegetables are about 30 per cent of less than carload lot rates, the latter type of shipment, to all practical purposes, is out of question. Obviously, the mixed carload offers the only possibility of shipping specific vegetables in less than carload lots to distant markets.

To gain an insight into some of the problems involved in fixing freight charges and minimum weight requirements on mixed carloads of vegetables, a brief statement regarding the nature of rate and weight schedules on straight carloads should be in order. For a given volume, vegetables vary considerably in billing weights, ranging from 20 pounds a bushel for spinach to 56 pounds a bushel for potatoes. Consequently, the total weights of the different vegetables which may be loaded into a carload also vary. For this reason vegetables have been grouped, in the main, into three minimum weight classes of 17,500, 20,000, and 24,000 pounds. The more important vegetables included are: in the first group, broccoli, green peppers, lettuce, mustard greens, parsley, spinach, and turnip greens; in the second group, beans (snap), cucumbers, eggplants, onions (green), shallots, squash, tomatoes, and turnips (full top); and in the third, beets (clipped top and root), cabbage, carrots (clipped top and root), corn (green), onions (dry), potatoes, and turnips (root).

Freight Rates on Vegetables

Freight rates on vegetables are governed by two chief considerations—the weight which may be loaded in a carload; and the relative perishability of the commodity. In general, the carload lot freight rates on a hundred pounds from shipping points in the Lower Rio Grande Valley to the various markets of the country are the same for vegetables in the 17,500- and 20,000-pound groups. Rates on vegetables in the 24,000-pound group

are about 25 per cent less than those in the other two. In the highest minimum weight group there are three exceptions. Potatoes and onions (dry) are favored with rates about eight per cent less than those for other vegetables in this group; green corn takes the same rates as are applicable to vegetables in the 17,500- and 20,000-pound groups.

Loading a carload with mixed vegetables having the same freight rates and minimum weights causes no complications. But when vegetables having different rates and minimum weights are mixed, a situation arises which the straight carload schedules do not cover. As for weights, seven combinations are possible; as for freight rates, eleven combinations are possible. Loading of vegetables from the different rate and minimum weight groups raises the question of the rate to be charged and the minimum weight to be fixed.

During the early years of mixed carload shipments from the Lower Rio Grande Valley, no differences were made as to rates on vegetables whether in straight or mixed carloads. Most of these carloads were shipped to markets within the state of Texas. During the period, 1910-11 to 1915-16, cabbage and potatoes constituted 87 per cent of the total volume shipped in mixed carloads, the former accounting for 62 per cent and the latter for 25 per cent. Two- and three-commodity mixed carloads made up 93 per cent of the total number, the former accounting for 72 per cent and the latter for 21 per cent. As the number of vegetables grown and shipped in mixed carloads increased, and as markets outside of Texas became of greater importance, early simplicity vanished. A radical departure was taken in 1916, as to rates and minimum weights applicable to mixed carloads. According to the rules then adopted, the rate on vegetables in a mixed carload was fixed as that of the vegetable, or group, having the higher, or highest, rate, and the minimum weight as that of the vegetable, or group, having the higher, or highest, minimum.

The general effect of the rules adopted in 1916 may be illustrated by a specific case. In a mixed carload of spinach and cabbage, for instance, the rate on the carload would be that of spinach and the minimum weight, that of cabbage. The carlot rate on cabbage from the Lower Rio Grande Valley to Chicago is $0.97 a hundred pounds; the rate on spinach is $1.25. The freight charge on a carload of cabbage, minimum weight, is $232.80 and of spinach, $215.25. The freight charge on a mixed carload of these commodities to Chicago loaded to a weight of 24,000 pounds, under the rule of 1916, was $295.20, an increase of about 27 per

cent of the charge for a carload of cabbage of minimum weight

The proportion between the spinach and cabbage loaded had an important bearing on relative charges as between mixed and straight carloads of these commodities. If a carload consisted primarily of cabbage so as virtually to make it a straight carload, the net result was an increased charge of about 27 per cent on the cabbage. On the other hand, if the carload consisted primarily of spinach, the excess charge on the small quantity of cabbage would be of little consequence. In other words, these rules on rates and minimum weights operated in such a fashion as to place a penalty on a mixed carload of cabbage and spinach in direct proportion to the amount of cabbage in the load. But the proportion of spinach which may be loaded is definitely limited by two factors. In the first place, the very fact that spinach has a minimum weight of 17,500 pounds is due to its relative bulkiness. This means that the maximum weight of spinach which may be loaded falls far short of 24,000 pounds. Hence, in order to avoid charges on a shortage of weight in a mixed carload of these vegetables, enough space must be left for cabbage so as to make possible a loading of 24,000 pounds. A loading of about 38 per cent of the carload, by weight, with spinach is the maximum. In the second place, the loading of a maximum weight of spinach and a minimum of cabbage in order to reduce to lowest terms the penalty on cabbage disregards market demand as related to these commodities. After all, relative demand for these vegetables determines the proportions which the shipper may load. In the small markets, the relative demand for such vegetables as spinach, turnip greens, parsley, and mustard greens is light as contrasted with that for cabbage, carrots, beets, and potatoes. This meant that the old rule as to rates worked a hardship in the case of shipments to the small markets to the extent that specialty vegetables were mixed with staple vegetables. This rule was disadvantageous also in the case of large markets. To the extent that receivers wished such commodities as spinach and parsley in less than a carload lot for the combination, the load having to be finished with such commodities as cabbage, carrots, and beets, the penalty on these latter commodities would be quite considerable. Under the old rule then, mixed carload markets had to pay a relatively high freight charge on such staple vegetables as were received mixed with vegetables of the 17,500- and 20,000-pound groups.

Efforts to Gain More Favorable Rates on Mixed Carloads

For years growers and shippers of the Lower Rio Grande Valley sought to obtain more favorable freight rates on mixed car-

loads. A number of circumstances delayed the realization of the desired results. In the first place, rules as to rates and minimum weights on mixed carloads applicable at point of destination, and not at point of origin, decide the issue. Since distribution of mixed carloads of vegetables from the Lower Rio Grande Valley is nation-wide, railroad companies the country over had to be brought into line and not merely the railroad companies serving at shipping points. In the second place, efforts to bring about a change met opposition from carlot receivers in the larger markets. Such dealers wished to furnish vegetables to the smaller markets within their trade area either through express, motor truck, or mixed carload shipments from the distributing point. Favorable rates on mixed carloads would have encouraged direct movement from point of origin to these small markets. In the third place, organization is quite essential in taking effective steps in obtaining desired changes and in financing such efforts. Since savings in freight charges accrue largely to the benefit of growers, they logically should conduct such campaigns. So far, vegetable growers in the Lower Rio Grande Valley have had indifferent success in establishing their own organizations. One of the important functions of a growers' association might well be that of working for the best obtainable freight rates on both mixed and straight carloads. As it was, efforts to obtain better rates on mixed carloads were supported mainly by a few of the shippers and various Chambers of Commerce, as well as by a number of individuals who did much work for small compensation. In the final drive that resulted in the adoption of more favorable rules for mixed carloads, much credit is due the two railroad companies making connections in the Lower Rio Grande Valley. Their active and whole-hearted support was largely instrumental in bringing about the long-sought changes.

As has already been indicated, freight rates and minimum weights on straight carlots are basic in establishing rates and minimum weights on mixed carlots. A rate according to that of the vegetable with the higher, or highest, rate in the mixture and a minimum weight according to that of the vegetable having the higher, or highest, minimum weight, is one application of the straight carlot schedules. A new ruling as to rates and minimum weights on mixed carloads was made effective for Texas and the rest of the Southwest Territory in 1928, and to the rest of the United States, with minor exceptions, in February, 1930. As for rates, under the new rule, each vegetable takes its own straight carlot rate in the mixed carload. As for minimum weights, no uniformity obtains at the present time. In the main, three rules are

in force: a minimum of 20,000 pounds regardless of the mixture, applicable to all markets in Texas and to Denver, Colorado, and adjacent area; the minimum of the vegetable, or group, having the higher, or highest minimum, provided such vegetable, or group, constitute 25 per cent, or more, of the total weight of the carload, applicable to the Southwest Territory other than that covered by the 20,000-pound minimum rule and to the Southeastern Territory; and a minimum of the vegetable having the highest minimum, applicable to Eastern, Official, and Western Territories.

Effect of Changes in Freight Rates on Mixed Carload Shipments

A comparison of mixed carload shipments during the season 1926-27, the last year the old rule was in full effect, with shipments during the season 1930-31, the first year the new rule was in full effect, should give some indication as to consequences of changes in rules as to freight rates. The sample data on mixed carloads for these two seasons were arranged accordingly as carloads were composed of vegetables carrying the same rates and of vegetables carrying different rates. The more important changes may be summarized as follows:

1. Mixed carloads of different rated vegetables rose from 59 per cent of total mixed carload shipments in 1926-27 to 80 per cent in 1930-31. Evidently, shippers and carlot receivers were taking advantage of the greater flexibility of the new rule.

2. The percentage of mixed carloads of different rated vegetables destined to nearby markets in the West South-Central States (Texas, Oklahoma, Louisiana, and Arkansas) declined from 59 in 1926-27 to 26 in 1930-31. So long as the higher, or highest, rated vegetable in the mixture established the rate on the whole carload, the penalty on the lower rated vegetable became more pronounced the greater the distance to point of destination. Hence the strong tendency, under the old rule, of confining such shipments to the relatively nearby markets. The marked increase in importance of distant markets as outlets for different rated combinations under the new rule is an indication of far-reaching changes in the make-up of mixed carloads for such markets.

3. A decided shift has occurred as to the relative importance in the mixed carloads of vegetables from the different minimum weight groups. Vegetables in the 17,500-pound group rose from 6 per cent of the total weight of carloads containing such vegetables in 1926-27, to 15 per cent in 1930-31; vegetables in the

20,000-pound group declined from 22 per cent to the total weight of carloads containing such commodities in 1926-27, to 19 per cent in 1930-31. The increase in relative importance by 240 per cent of vegetables in the 17,500-pound group in mixed carloads containing such vegetables can be accounted for though the opening up of the distant markets to different rated combinations brought about by the new rule. While the change in freight rates was in the process of realization, growers had been encouraged to increase their production of specialty vegetables on the strength of expanded market outlets for such vegetables under the more favorable rate schedule. The decline of 17 per cent in relative importance of vegetables of the 20,000-pound groups in mixed carloads containing such vegetables can largely be explained in terms of the relative decline in shipments of mixed carloads to Southern markets, as vegetables of this group have their chief outlet in those markets.

4. The relative importance of the two-commodity carload, beets and carrots, as the means of distributing these commodities in mixed carloads, dropped from 75 and 76 per cent, respectively, in 1926-27, to 35 and 25 per cent, respectively, in 1930-31. One of the reasons for the importance of beets and carrots mixed during the former season was due to the fact that both vegetables have the same rates and minimum weights. This type of carload was popular for shipment to distant markets, especially to the New England and Middle Atlantic states. The decided increase in shipments of beets and carrots in the general mixed carload during 1930-31, reflected the favorable consequences of the changes in freight rates applicable to mixed carloads.

5. Two-commodity carloads dropped from 35 per cent of the total number of mixed carloads in 1926-27 to 20 per cent in 1930-31. Carloads of seven commodities, or more, rose from 15 per cent of the total in the former season to 31 per cent in the latter season. The greater the number of vegetables loaded in a mixed carload, the greater the likelihood of a mixture of vegetables of different rates and minimum weights. Hence a way that shippers and carlot receivers had of moving vegetables under their straight carlot rates and minimum weights, under the old rule, was to place emphasis on mixed carloads of fewer number of commodities. For instance, of the mixed carloads in 1926-27 loaded with vegetables of the same rate, 72 per cent were two-commodity, and an added 16 per cent were three-commodity carloads. The increase in relative importance of carloads of a greater number of vegetables so apparent in 1930-31 as compared with

1926-27 was due, in large part, to the more liberal rules as to rates in force during the latter season.

Need for Standardization of Minimum Weight Requirements

Variations in rules as to minimum weights are somewhat confusing and may prove costly to the shipper in the event of necessity to divert or reconsign a mixed carload. Take, for instance, a mixed carload of spinach and cabbage loaded to a minimum of 20,000 pounds for a market in Texas. If the carload contains 5,000 pounds, or more, of cabbage, a destination outside of Texas

MAXIMUM AND USUAL LOADINGS OF VEGETABLES

Vegetables	Containers	Maximum Load		Usual Load		Minimum Weight
		No. Containers	Weight	No. Containers	Weight	
Beets	L.A. Crates	372	28,272	368	27,968	
Beets	½ L.A. Crates	712	27,056	640	24,320	
Cabbage	L. A. Crates	372	31,620	320	27,200	
Cabbage	100 Lb. Sacks	330	33,000	250	25,000	
Carrots	L. A. Crates	372	26,040	368	25,760	24,000
Carrots	½ L. A. Crates	712	24,920	644	22,540	
Corn (Green)	Bu. Baskets	520	28,600	500	27,500	
Onions (Dry)	50 Lb. Sacks	540	27,000	500	25,000	
Potatoes	100 Lb. Sacks	330	33,000	250	25,000	
Turnips*	Bu. Baskets	574	28,700	500	25,000	
Beans (Snap)	Bu. Hampers	720	25,200	660	23,100	
Cucumbers	Bu. Baskets	450	23,400	415	21,580	
Egg plants	Bu. Hampers	720	25,920	660	22,440	
Onions (Green)	L. A. Crates	372	21,204	368	20,976	20,000
Squash	Bu. Baskets	450	21,600	415	19,920	
Tomatoes	Miss. Crates	1008	23,184	896	20,608	
Tomatoes	Lugs	720	23,760	660	21,780	
Turnips**	L. A. Crates	372	26,040	368	25,760	
Broccoli	½ L. A. Crates	712	20,648	640	18,560	
Mustard	Bu. Baskets	864	21,600	846	21,150	
Parsley	Bu. Baskets	864	18,144	846	17,760	17,500
Peppers	Bu. Hampers	720	20,160	660	18,480	
Spinach	Bu. Baskets	864	17,280	828	16,560	
Turnip Greens	Bu. Baskets	864	21,600	846	21,150	

* No top.
** Full top.

in the Southwest Territory, or in the Southeastern Territory, would make a 24,000-pound minimum operative. Consequently, freight charges on a deficiency of 4,000 pounds would have to be paid. Diversion to any market in Official, Eastern, or Western Territories, regardless of the amount of cabbage in the mixture, would make the 24,000-pound minimum effective. If a shipper of a mixed carload wishes to keep open all markets in case of a need to divert, he must load a minimum weight according to that of the vegetable, or group, in the carload having the higher, or highest, minimum. This means that the old rule as to minimum weights, with important qualifications, is still in force.

It is to the advantage of shippers to load at least the minimum weight. Any deficiency in weight which must be paid for means a

proportionate increase in freight charges. To the extent that the shipper must load a minimum according to the vegetable having the higher, or highest, minimum in the mixture, he is concerned as to the bearing that mixtures of various vegetables have on possibilities of attaining the required minimum. As an indication of the problem in hand, a table on maximum and usual loadings of vegetables is presented. It is obvious that any combination between vegetables from the 24,000- and 20,000-pound groups raises no appreciable difficulty in reaching a minimum of 24,000 pounds. It is chiefly in combinations between vegetables of the 24,000- and 17,500-pound groups, or 24,000-, 20,000- and 17,500-pound groups that the minimum may not be loaded, and in this case, principally with the two vegetables, spinach and parsley. The demand for these vegetables in the smaller cities is so light that the quantities desired in the mixed carload are too small to interfere with reaching the minimum weight. It is mainly in the case of the larger cities not desiring straight carloads of these vegetables but mixed carloads loaded heavily with one, or both, that the minimum may be unattainable. Suppose a receiver desires 250 bushels of spinach and 250 bushels of parsley—balance cabbage. About 864 bushels make a maximum carload. The 500 bushels take up nearly three-fifths of the space; this quantity of spinach and parsley makes a total weight of 10,250 pounds, or less than half a carload. The remaining space loaded with cabbage in Los Angeles crates would make a total weight of 13,322 pounds, leaving a deficiency of 428 pounds. To the extent that a receiver might desire larger proportions of spinach and parsley, the deficiency would become greater. Quite frequently receivers in the larger cities insist on loadings of this nature being willing to pay for the deficiency.

As a means of giving full effect to the rate schedule now in force, that of each commodity taking its own straight carlot rate in mixed carload shipments from the Lower Rio Grande Valley, a standardization of minimum weight requirements on a favorable basis is needed. The 20,000-pound minimum is, perhaps, unnecessarily favorable to shipper and receiver. The 25 per cent rule would permit heavy loadings of the bulkier vegetables without any sacrifice as to minimum weights. The maximum of spinach which may be loaded in combination with cabbage under the highest minimum rule is about 38 per cent of the total weight; under the 20,000-pound minimum about 70 per cent; and under the 25 per cent rule, of course a minimum of 75 per cent, provided the total weight of the mixed carload does not exceed 17,500 pounds. The 25 per cent rule would, undoubtedly, be quite satisfactory. Shippers

are of the opinion that its adoption would materially increase the volume of mixed carload shipments, particularly of mixed carloads loaded heavily with specialty vegetables destined to the large cities.

Summary

The usefulness of the mixed carload in distribution of vegetables lies largely in its combination of the advantages of both less than carload lot and carload lot shipments. It offers the only practicable means of shipping specific vegetables in less than carload lots to distant markets. In the early days of commercial vegetable production in the Lower Rio Grande Valley no distinction was made as to rates on vegetables whether shipped in straight or mixed carloads. In 1916, rules were adopted to the effect that the rate on a mixed carload was established by the vegetable, or group, in the mixture having the higher, or highest rate, and that the minimum weight was established by the vegetable, or group in the mixture having the higher, or highest, minimum. These rules placed a hardship on staple vegetables when mixed with specialty vegetables, particularly in case of shipments to distant markets. New rules were adopted for the Southwest Territory in 1928, and for the rest of the United States, with minor exceptions, in 1930. Under the new rule as to rates, each vegetable in a mixed carload takes its own straight carload lot rate. This is a most desirable relationship as to rates between straight and mixed carloads. As to minimum weights, no uniformity obtains at present as between different destinations. Virtually, the old rule, with important qualifications, is still in effect. A minimum weight of 20,000 pounds, regardless of the mixture is, perhaps, more favorable to shippers and receivers than necessary. The 25 per cent rule, the minimum weight being established by the vegetable, or group, in the mixture having the higher, or highest, minimum, provided such vegetable, or group, constitute 25 per cent, or more of the total weight, would be entirely satisfactory. Its adoption as standard for all markets would be a boon for shippers and receivers and would greatly facilitate the movement of mixed carloads.

APPRAISAL METHODS OF FEDERAL LAND BANKS[1]

P. L. GADDIS
FARM CREDIT ADMINISTRATION

The Federal Farm Loan Act, as originally enacted provided that in making appraisals of land offered as security for loans from banks in the farm loan system the value of the land for agricultural purposes shall be the basis of appraisal and the earning power of the land shall be a principal factor. Loans were limited to 50 per cent of the value of the land and 20 per cent of the value of the permanent insured improvements on the farm offered as security. This act approved on July 17, 1916, has been amended at various times but the provision with regard to agricultural value and earning power has not been changed. In requiring the land banks to lend on an amortized basis the framers of the Act apparently expected that the installment repayments should be made from the earnings of the land.

The Emergency Farm Mortgage Act of 1933 provided for loans on the security of first or second mortgages on farm real estate or farm chattels to be made by the Land Bank Commissioner from funds especially provided by Congress for his use. It limited these Commissioner loans with all prior liens to not more than 75 per cent of the normal value of the property as determined upon an appraisal made pursuant to the Federal Farm Loan Act.

The emergency act made two notable changes with respect to appraisals. It placed them on the basis of normal values rather than current values which might be either distressed or inflated. It also provided that in making loans on groves and orchards the federal land banks and all government agencies making such loans may in appraising the security give a reasonable and fair valuation to the fruit trees growing on the property and forming a substantial part of its value. The latter change indicated that some latitude could be given to the interpretation of agricultural value and earning power of land in the case of specialized farming. On the basis of the orchard amendment loan service has been extended to various types of specialized farming in a manner to be discussed later.

Prior to the passage of the emergency act an effort had been made to get a long time viewpoint of farm values but there had not been the persistent effort which has since been made to attain

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economics Association, Chicago, December 28, 1934.

throughout the country, a uniformity of appraisals based on normal price conditions.

An explanation of our interpretation of the term "normal prices" is apropos at this point. Congress desired to bring about normal values, and in the agricultural adjustment act selected 1909-1914 as the basis for parity values between the values of agricultural products and the products of industry. After an exhaustive study of the price levels covering 135 years, and projecting the price trends into the future as best we could, we concluded that the approximate 1909-14 level of prices might reasonably be expected to be the normal average which would prevail through the years when these loans were being repaid. There are some farm products for which the normal demand has changed materially since our base period. The prices of such products are adjusted accordingly.

Our appraisal policy may be summed up in the question "What is this farm worth to an average farmer in its present condition for a line of production common to the community if the products are sold at average prices prevailing in the years 1909-14 with such adjustments as are necessary to allow for the change in economic position of certain crops such as oats, prairie hay, tobacco, citrus fruits, etc.?"

This does not mean that land should necessarily be valued at what it was regarded as worth or at what it may have sold for during the base period. There have been many changes in conditions since then that may have caused the value of land to be higher or lower than at that time, although based on crop prices of that period. For example, an area may have shifted its production into lines of more intensive farming with a resultant increase in income per acre, while markets have developed and the community has become more desirable from the standpoint of living conditions. Furthermore, the use of better farming methods has increased generally the per acre yields of crops produced and the unit returns from livestock. These factors would tend to increase land values.

On the other hand, there are areas in which there is no longer a satisfactory market for the products for which the land is best adapted, other areas in which land has eroded or otherwise become depleted in fertility, while taxes have increased quite generally throughout the country and have in many cases adversely affected land values. The costs of labor, equipment and supplies in many areas have also increased considerably and living standards have been raised, leaving less of a gross income with which

to pay for land. The field of investment during the base period was more limited and purchasers of land in some of the better areas were satisfied with a return of perhaps 3 per cent on their investment, depending on an appreciation in land values to compensate for the relatively low rate of interest. However, other types of investment are now attracting capital, and the investor in land realizing the possibility of a stabilized land market and not anticipating a material increase in values, recognizing the hazards in connection with farming operations and the care that must be given to the property, is demanding a reasonable return on his investment. All of these are deterrent factors in land values, as compared with the base period, other things being equal.

On the basis of regular federal land bank loans supplemented by Land Bank Commissioner funds many loans have been made during the past 18 months totaling a full 75 per cent of the normal agricultural value of farm properties. This service rendered by the federal land bank and the Land Bank Commissioner has undoubtedly saved the homes of thousands of farmers and has relieved the tension existing in many districts where good farmers who had honestly endeavored to meet their obligations failed because of low prices and were at the mercy of their creditors. Much credit is due thousands of individual mortgagees and loan companies for their cooperation in withholding foreclosure action and accepting the offers made by the federal land banks and the Commissioner as a basis for composing their claims against their farmer debtors, thus allowing them to refinance themselves on more favorable terms. From May 1, 1933 to December 19, 1934, the federal land banks made 222,565 loans totaling $858,396,784 and the Land Bank Commissioner 345,901 loans in the amount of $614,971,078.

In providing that the earning power shall be a principal factor in valuing land it is apparent that Congress recognized other factors that enter into agricultural values and that have an important bearing thereon. The main factors bearing on land value may be outlined as follows:

(1) Production factors including type of farming; quality, durability and crop adaptation of soils, and methods required to keep them productive;
(2) Location with regard to the community, roads, markets, schools, churches, conveniences, etc.;
(3) Features of farm desirability including improvements, water supply, convenience of operation, and home attractiveness;
(4) Various hazards of production and marketing.

Therefore, while we make appraisals on the basis of agricultural value we recognize that earning power is only one of the factors determining values, that farms producing the same income, variously situated, may have quite different values due to other factors. This is equivalent to saying that a farmer is willing to accept a lower rate of return on his investment in land if it is located in a good district where he and his family and other farmers of similar tastes desire to live. In such a locality where many farmers want the benefits of a given set of favorable surroundings and where there are many desirable rewards aside from monetary income, land is more valuable than land of equal producing power less favorably located. Furthermore, farmers who are hard working, thrifty and cooperative are able to realize greater returns from the same quality of land than those who do not possess these characteristics; and hence lands settled by such people produce more and are worth more per unit produced than lands of equal quality not so farmed.

I feel sure that many of the mistakes which have been made in appraisal work, not only in the land bank system, but in other organizations as well, have been due to a few fundamental errors: (a) Lending institutions have been too much influenced by current conditions. (b) Practical minded appraisers often fail to *classify* the land and may value it too much on averages, in terms of loan limits or acre yields of principal cash crops, and without enough regard to acreages of such crops and net income. (c) There is often a failure to recognize that costs of production do not decrease in the same degree as yields, that land returning only cost of production with normal prices has no permanent agricultural value. When farm commodity prices advance, such land has a temporory value and may sell on the basis of temporary returns. (d) Reflecting the management of an exceptionally good farmer in values assigned to a medium or poor farm is a common error; likewise valuing medium class land too high because an outstanding farmer nearby has demonstrated its potential productiveness under good management. (e) In general there has not been a sufficient recognition of the differences in debt-paying ability of farmers. (f) Some appraisers, particularly those with agricultural college training, have adhered too closely to soil type and potential earning power without sufficient recognition of actual earnings of average farmers and other factors such as community, farm desirability and the type of people who live in the community. (g) There has been an over-sight of hazards in production and marketing and a failure to recognize what

are the reasonable returns to farmers on their investment under a wide variety of conditions. This has sometimes been due to a failure of the appraiser to distinguish clearly between different forms of income, gross and net, from cash rentals, crop rentals, partnership rentals, owner operation, etc. Reports of some investigators have added to the confusion by showing a uniform low rate of interest on land investments under a wide variety of conditions and allowing as labor income the rest of the net returns to the owner operator. Another fallacy, from the standpoint of farm loan principles, not unknown but often resorted to by the real estate profession, is that of allowing ordinary wages to an owner and figuring the balance as returns on investment which many times is capitalized at a low rate and thus attributes a fabulous value to the land.

It seems to me that investments in lands may logically be compared with investments in bonds. An investor who buys a bond backed by the credit of a substantial nation is satisfied to receive a return of perhaps 3 per cent or less. If he purchases a bond backed by a municipality in sound financial condition ordinarily he is willing to accept 4 per cent or 5 per cent as a reasonable return. If he takes more risk with a less substantial backing for his securities, he may expect 7 per cent or 8 per cent or 10 per cent; while from a purely speculative enterprise he may expect, if he invests at all, to obtain a considerably higher return on his investment. Likewise, a man who invests in land of the highest quality that is subject to very little depreciation, that is adequately and appropriately improved, located in an area of good farmers and substantial homes with many conveniences and moderate taxes, is usually satisfied with a return of 5 per cent on his investment, or possibly, even less. His property is readily rentable, the income therefrom is relatively steady and sure and if he wants to dispose of the farm at almost any time, it has a ready sale. A shrewd purchaser of land that has one or more material forms of risk, that is more difficult to rent to advantage and to dispose of at a reasonable price, that is located in a community where there are few conveniences and where living conditions are not favorable, will expect to purchase on such a basis as to realize a much greater return on his money.

From what I have just said it should not be concluded that the Farm Credit Administration is leaning too heavily upon the capitalization method of valuing land. As a general principle it is recognized, but the capitalization of net income is frequently so beset with error that it can not be used safely as the sole or pri-

mary method for establishing value. The difficulties of obtaining accurate income data and of adapting them to the average farmer, or accurately estimating expenses, of deciding upon the proper capitalization rate and determining the effect thereon of other factors, are some of the most common sources of error. The capitalization method is used, therefore, mainly as a check on other determinations. Because of the difficulties connected with its use some economists have condemned the capitalization method entirely and suggested the use of sale price as the best criterion of values. However, the use of sale price must be condemned as quite as erratic as the capitalization method. Under normal and stable economic conditions sale value should be a rather good index to agricultural values in old and well settled communities of well developed types of farming with returns relatively sure, and where there are no other factors entering into value except agricultural consideration. However, abnormal economic conditions, fluctuations in the prices of farm commodities, cycles of favorable and unfavorable seasons in some parts of the country, considerations other than agricultural, as for example, prospects of oil or proximity to cities, as well as speculative conditions such as occurred in the Florida boom, all lead us to the conclusions that sale price is quite undependable as a basis for valuing land for long-term loan purposes.

In my lifetime I have not seen a period of five consecutive years when sales prices were dependable, reflecting sound conditions. In the Middle West the early and middle nineties were badly depressed by drought and low prices. The later nineties and the early years of this century were characterized by a clearing up of distressed land resulting therefrom. By 1905, the surplus land was mostly in good hands and ascending prices of products and well advertised profits from land speculation caused land to ascend in price more than income warranted. Land that paid 3 per cent then on what it was regarded as worth was a good investment because of increments in value. This trend continued until the World War when sky-rocketing prices for products gave land prices an impetus which was accelerated by the profits of speculation. It required almost ten years for land again to get down to reasonable prices based on earning power. Then in '31, '32, and '33, the pendulum swung too far in the opposite direction.

We are again getting up to a more stabilized condition, but in the offing is perhaps another period of inflation. In one section high prices for tobacco that can hardly be more than temporary and in another area talk of inflation and some easy oil money,

give an enthusiasm to land purchases that can easily go too far. Only in a few areas near large centers of population do we find any consistency to sale prices, and there they are a reflection of other values, home values and suburban values, rather than productive values. Such sale prices afford safety to loans rather than a basis for their liquidation. Outside earnings rather than earning power is often back of them.

Since the passage of the emergency farm mortgage act, we have given a normal value to land of applicants for loans in the face of very low sale prices and undoubtedly we will be urged and expected to go higher when sale prices increase. It is our contention that normal values mean the same whether current prices are high or low and it is our purpose to take a firm stand to keep farm mortgage credit on an even keel, thereby stabilizing values and making mortgage investments more attractive.

A land bank appraiser valuing land for loan purposes is expected, therefore, not to rely upon capitalization or upon sale prices, although using them as checks, but to classify the land on the farm according to its crop use, adaptation, production and condition and to give a value to the land of the different classes in comparison with all the lands in the area and in other areas with which he is acquainted. In establishing these values he should have in mind not only the main production factors but also location, farm desirability and the hazards entering into the production and marketing of crops.

After valuing the land, he is expected to estimate carefully the replacement less depreciation value of buildings and determine what each building is worth to an average farmer who would operate the particular unit. In establishing this value of buildings the appraiser considers the tastes and requirements of average farmers for the locality and type of farm. Summing up the value of land and the value of buildings to the farm he arrives at the agricultural value of the property.

The appraiser checks this value with the earnings of the farm, using normal prices for farm products, customary acreages and average yields obtained by an average farmer for the locality. If the farm is located in an area where properties are ordinarily rented, he estimates the net rental returns to the landlord and determines whether the values established are consistent therewith; that is whether a farmer would be willing to invest in the property the amount at which it is appraised with the prospect of receiving the returns estimated. The appraiser must, of course, consider all of the factors suggested above entering into land

values in deciding whether the rate of return is reasonable, that is, in deciding what rate of capitalization should apply; but it is regarded as much less dangerous for him to use his good judgment first and then check with the returns rather than to estimate first the average net returns and then mechanically figure the value by capitalization.

In examining the report of one appraiser recently it was discovered that he had valued the land at a figure ending with odd cents. We found he had estimated the net income from the property and capitalized it at a certain per cent, then divided by the number of acres which gave him the supposed answer. We further found that the appraiser had based his income on inter-tilled crops instead of on the orchard that was just coming into bearing and which would be the basis for the applicant's paying out on his loan. This illustrates how far afield a mechanical method may lead an appraiser.

In areas where farms are not rented but operated by owners the appraiser estimates the net returns to the owner-operator from average management, allows the owner a reasonable share of the net returns for his management and labor consistent with the standard of living in the area and the size and importance of the unit, and checks with his land value that part which may properly be allocated to the land. In areas where rental and owner operation are both common the appraiser may use both checks on his appraisal. Reasonable rates of returns should reflect all factors and the hazards of production and marketing.

The appraiser checks also with sale prices of land under various conditions and with the opinions of substantial farmers as to what they could afford to pay for land if they were assured of "normal prices" for their products. If the property being appraised is a livestock unit the appraiser checks with the carrying capacity in terms of milk cows, beef cattle, sheep or poultry, as the case may be, and determines whether his values already established by methods of comparison are consistent with the carrying capacity of the unit.

The final check of a federal land bank loan is the ability of the applicant or an average farmer, whichever is the less efficient, out of the earnings of the farm, to meet the installments on the loan in an orderly manner.

Loans by federal land banks and the Land Bank Commissioner may be made upon the basis of the value of land for specialized farming provided the specialty is well established on a commercial basis in the particular locality, that it has proved profitable

over a period of years and market outlets appear stable, and that farmers in the locality generally understand the production, care and marketing of the specialized product. Where these factors are favorable loans may be made on farm lands that are well located, well improved, desirable and normally salable on the basis of the value of the property for the specialized type of farming. Such part of the land as is not used for the specialized farming is valued only on the basis of what it contributes as an adjunct to the project or in the production of agricultural products common to the locality. In valuing specialty farms particular attention is given to whether they have the necessary buildings and equipment to carry on the particular type of farming. The responsibility for classifying areas for the purpose of loaning on the basis of specialized farming rests with the individual federal land bank. Before a land bank appraiser assigns a value to any farm upon such a basis he is expected to obtain information from the land bank regarding the classification of the locality with respect to its use for the particular specialized type of farming. Special forms are designed for reporting on specialized farms since there are production and marketing problems in connection with all such areas, that need special investigations and reports. In the light of the above principles, regulations have been issued on the appraisal of orchard lands, poultry farms, wood and timber lands, and turpentine lands. It is contemplated that special regulations will be issued regarding other types of specialized farming such as truck farms, nurseries and green houses, etc. We receive many inquiries from owners of farms devoted to various unusual types of farming such as fox farms, frog farms, and oyster beds but it appears that most of such farms do not have the community background or the history of successful operation to qualify.

Ever since the formation of the federal land bank system, engineering studies have been made in some of the districts where irrigation and drainage problems have been important. Nine of the federal land banks now have engineer appraisers and another bank is contemplating the employment of such an appraiser in the near future. In the past year or two there has been an unusual demand for loan service in drainage and irrigation districts. Formerly farmers in such districts could obtain loans through other agencies than the federal land banks although they would often have to pay a higher rate of interest or an extra commission because of hazards involved. Since 1929 so many of the special improvement districts have been in bad financial straits and the

experience of mortgage loan companies has been so unfavorable that it has been almost impossible for farmers in such districts to obtain financial assistance or to obtain extensions on existing mortgages unless their lands are in first class condition and their districts well maintained and well financed. The demand for loans in such districts through the land bank system has accordingly greatly increased and has necessitated the employment of a large number of engineers by some of the land banks to make the investigations necessary for the establishment of proper loan standards.

In the emergency farm mortgage act, Congress authorized the Reconstruction Finance Corporation to use $50,000,000 for reducing and refinancing the indebtedness of agricultural improvement districts and this was later increased by $75,000,000. Even this $125,000,000 total may be inadequate for the purpose and, if so, it is hoped that this fund will be increased and made a permanent revolving fund in order that many districts may be put into a position to work their way out of their difficulties.

The refinancing of small suburban farms requires special mention. It is not the policy of the Farm Credit Administration to establish a minimum acreage limit but it is required of a federal land bank loan, as inferred above, that the farm be of sufficient size to support a family and in addition provide income sufficient to meet operating expenses, fixed charges, maintain the property and meet the installments on the loan. In the case of specialized farms with high acre incomes loans may be made on small tracts, but when devoted to general or extensive farming the acreage must be proportionately large so that the income will meet the above requirements. Loans by the Commissioner may be made where the property does not meet in full these requirements provided the land has an agricultural value and the owner would be able to support his family and pay installments in normal times although part of his income would be obtained from work outside of his farm property, for instance, in neighboring factories, by day labor of any kind, or by the rental of outside lands.

It appears that special consideration should be given to what constitutes agricultural values in the case of such undersized units. Many such properties located near the larger towns and cities furnish to those employed on a part or full time basis a substantial part of the family living, which is not readily translated into farm income as used in connection with regular farm units.

Where town or city location is favorable for outside employment, where sale values are strong, where small tracts command

a cash rental considerably above crop rentals because of the savings to the family through the use of the products of the farm, and where such owners generally are making a substantial part of their living from their land and livestock, it appears that in the case of desirable, well improved acreages of suitable soil in well established communities, an appraiser would be justified in considering, in addition to returns from crops sold, the contribution of the farm to the family living as a part of the agricultural income on which values and loans are based.

It is hardly fitting to close a paper regarding appraisal methods without referring to the personal risk. We have made an effort to distinguish between the terms moral risk, credit risk, and the various other terms used in describing the personal element. The term "moral risk" has become so deeply imbedded in farm loan literature as a substitute for the general term "personal risk" that it is difficult to get away from it. We regard personal risk as including the characterization of an applicant (1) as a farmer, (2) as a manager, (3) as a moral risk, (4) as a credit risk, (5) as a citizen, and (6) as a family man. A man may be a good farmer, raise good crops and keep livestock of high quality but still be unsatisfactory from a credit standpoint. He may be a good moral risk, that is, be honest and willing to pay, but a poor manager or very heavily involved and unable to pay and therefore a poor credit risk. He may temporarily be a good credit risk, that is, pay his bills promptly but be a poor moral risk from the standpoint of being engaged in some unlawful business which temporarily gives him good paying ability but may result in his forcible retirement from society during which period his loan becomes troublesome. Maximum loans are based upon a good moral risk, a satisfactory credit rating, average farming ability and management, good citizenship and family cooperation. It is not intended that loans will be made to men who are not honest and who do not intend to do their honest best to meet their obligations. Loans may be made in reduced amounts to those who are below average as farmers, farm managers, or whose manner of living, method of operations, or lack of family cooperation is such as to cast doubts upon their ability to pay out on full loans, but who should be successful with a more moderate amount of indebtedness.

During the past two years the Farm Credit Administration has been engaged with the largest volume of farm mortgage refinancing ever handled by one organization. We expanded our appraisal force and other personnel many fold. We had to contend with the

inexperience of new appraisers, with pressure for speed in the saving of worthy farmers facing foreclosure and eviction, with the demands of overextended creditors, and with the false hopes of some applicants who expected too much. As we pass the agricultural credit crisis and descend from the peak of the mortgage refinancing activity, we can define more clearly our long-time objective. Our aim is to build a lending system that will stabilize farm credit—that will be practical and helpful in fitting credit to needs and paying ability; that will be scientific in its investigational outlook and sound in its principles of lending; cooperative with national and state land utilization programs; courageous in departing from outworn precedent; and resourceful and aggressive in finding ways to do what should be done.

DEVELOPMENT OF THE REPORT OF THE APPRAISAL COMMITTEE OF THE NATIONAL JOINT COMMITTEE ON RURAL CREDITS[1]

HUDSON BURR

In view of the quiet important part played by the American Farm Economic Association in both the formation and the subsequent functioning of the National Joint Committee on Rural Credits, I feel sure a brief outline of at least its purpose and its membership should be recounted here, and before the Report of the Appraisal Committee itself is developed. The National Joint Committee on Rural Credits was formed early in 1933, in St. Louis, under the leadership and, if I may say so, quite entirely through the efforts of our Chairman of this afternoon, Mr. D. Howard Doane. He sponsored it originally in his position as President of the American Society of Farm Managers and from the outset sought and secured the backing and cooperation of the American Farm Economic Association. Its purpose was to study several of the more important problems basic to rural credits and by the use of sub-committees to publish in pamphlet form articles which it was hoped would at least contribute to the solution of these problems. On the Central Committee were representatives of three main groups, creditors, debtors and the so called middle group. The federal land banks, joint stock land banks and insurance companies interested in farm credits comprised the creditor group. The debtors were represented by two of the leading farmer organizations, the National Grange and the American Farm Bureau. The Society of Farm Managers and your own Farm Economic Association formed, in the main, the middle group. Topics were soon assigned to sub-committees on which sat members from each of these three groups. Among the last of the sub-committees to be formed was that on Appraisals.

I have given this brief background with a definite thought in mind, principally to show that possibly for the first time in an effort of this kind there was available for consultation and advice a truly representative and vitally interested committee membership. It was not simply a group of creditors seeking to devise an appraisal system specifically fitted to their own particular needs. The committee was not dominated, for instance, by members interested in appraising only for farm loans or for farm sales. But it was in turn deeply conscious of its desire to contribute, if at all

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economic Association, Chicago, December 28, 1934.

possible, to rural appraising considered in its broadest sense, and in attempting to agree upon and lay down certain fundamental and basic principles upon which a truly American system of appraising might rest. This, you will surely grant, was no small vision. While similar attempts have no doubt been made in the past, and from time to time various new ideas and conceptions have been proposed, it is doubtful whether these ideas often came from other than personally interested individuals. Consequently they have received no wide attention. It is, I feel quite sure, the sincere hope of the sub-committee on appraisals that the breadth of influence as well as the scope of the work of its members may with propriety be one of the reasons, even though a minor one, why its report will be given a hearing. It likewise goes without saying of course that any hearing granted should be critical, questioning and if necessary openly doubtful. We should in fact prefer to have criticism of any kind rather than none at all.

After holding some three meetings during the winter of 1933-34 there was finally published by the National Joint Committee a strictly preliminary appraisal report entitled "Standards of Practice for Rural Appraisers." Through the cooperation of the Journal of Farm Economics, which published the Report in its July 1934 issue, reprints were made available for distribution and by one means or another about 2000 copies have been circulated, principally to the field men of various insurance companies as well as to several of the land grant colleges. It is of this preliminary report that I wish chiefly to speak, pointing out to you a few of its basic conceptions.

It will be immediately obvious that with so broad a membership, as described, the first task confronting the Appraisal Committee was to attempt in so far as possible to talk a common language. Not even a good start could be made unless this was accomplished. We therefore divided into three small groups, asking each to determine to what extent they were in agreement on what were thought to be the three basic divisions of any appraisal, namely Ethics, Definitions and Procedures. This began to clear away at least a few of the many fogs and it was not long before a quite common agreement was reached on the highly important division of Ethics. I wish it were possible to spend much more of my time, if in fact not all of it, on this one point. It is so outstandingly important, and in the past we believe it has been so badly handled. For without proper ethical standards surely no appraisal is worth the paper it is written on, no matter how technically sound or highly intelligent it may be. All I can do, however, is to

call your attention to that section of the Report and to suggest, perhaps rather vainly, that if the Committee can eventually be credited with no permanent contribution other than to have emphasized and partially clarified the many ethical problems confronting all appraisers its hours of work will in no way have been wasted. It is in fact an attempt to lay the ethical foundation for the *profession* of rural appraising, a goal that has long been needed, as we see it. And I am sure it is a goal that will very definitely appeal to many members of this Association, for if it can be accomplished it should mean much to the young graduates of our Colleges of Agriculture who in the future may elect to enter this type of field work. Opportunities in this direction would appear to be almost unlimited.

Following the section on Ethics in the Report comes a short section on Definitions and again I should like to spend much more time on it than is possible. It was of course vitally necessary that a common agreement be reached on fundamentals and it was at this point, as we look back at it, that we now believe one of our most fortunate accomplishments was secured. I refer to the definition of what we call "Basic Value." And in order to bring out my point more clearly it will first be advisable to define a "Rural Appraisal."

(1) Rural Appraisal

"An appraisal is the definite written detailed *opinion* of a qualified individual, or group of individuals, of the *Basic Value* of a rural property."

(2) Basic Value

"Basic Value is the *worth* of a property derived from such economic elements as Earnings, Location and Home Uses."

When the definition of Basic Value was finally acceptable to all of the Committee we felt sure a long step had been taken towards our hoped-for goal of a common road along which all appraisers could travel for a considerable distance, no matter what their ultimate and individual goal might be. To explain this statement more fully may I again quote from the preliminary Report (under the Procedure Section) to indicate what is meant by "Kinds of Value."

(3) Kinds of Value

"In this description of appraisal practice and procedure, it is assumed that there is but one kind of appraisal and the value determined thereby is known as the Basic Value.

"The appraiser, however, is often commissioned to report on other kinds of value, which emphasize to a greater or less degree certain features of value, among which are normal sale value, forced sale value, condemnation value, assessed value, etc. The process by which these special values are arrived at is as follows; the property is first appraised in the ordinary manner to arrive at the Basic Value. There is then added to or deducted from this basic value an amount which reflects the special feature emphasized. The resulting value is designated as the value for the special purpose required. The appraisal report should show the basic value, as well as the special value reported. This practice tends to classify appraisal procedure and recognizes a common basis for all appraisals regardless of the purpose for which they are made. Since this method gives a common objective, it will tend to give appraisers a uniform method of approach and weighing of factors."

Basic Principles

I believe it will now be helpful to inquire somewhat more intimately into the basic principles established by the foregoing definitions, (namely, of a rural appraisal, basic value and kinds of value) for without an extremely clear understanding of these principles the system itself can scarcely assume an intelligent form. It will also be advisable for me to admit, quite readily, that many of the following interpretations and comments I may make are developments which have occurred since the last meeting of the Committee itself. They have come about in large measure through the efforts made by one company to adopt the Committee Report and to build for its own use an actual and practical appraisal system. While every effort has been made to adhere to the exact definitions already referred to, it was of course found necessary to enlarge upon those definitions and procedures in such a way that they would in turn be easily and fully understandable to the actual appraiser in the field.

Our definitions of basic value says in effect that the worth of a rural property is derived from three chief economic elements. In explaining this to practical appraisers we liken basic value to a pool into which flow three streams of value, carrying the elements of earnings, location and home uses. It may also be likened to a three-legged stool, with each of the legs supporting its particular value, although frankly the legs would not ordinarily be of equal length. We say that basic value is made up from any one or all of these three elements, in varying proportions, and of course we

insist that each element be considered in a quite broad sense. This breadth of consideration particularly applies to the element of location. Even though a rural property may have no value from actual earnings, with the anticipated annual income figuring out less than the estimated annual expense, the property may still have a value secured from one or the other (or both) of the elements of location and home uses. In fact, under certain exceptional conditions we believe the only element of value present may be found quite entirely from the influence of location or from home uses alone.

May I now back-track somewhat and recall to you our first definition, i.e. that of a rural appraisal? It is being discussed after basic value in order to emphasize it. In its simplest form our definition says a rural appraisal is an *opinion* of value. This thought is basic to our entire conception of a system fitted to American appraisal needs. It was chosen only after lengthy discussion and the members of the Committee were well aware of the fact that unless this definition was generally accepted the proposed system itself could not be accepted. We were aware that, for instance, in Germany an appraisal is considered rather definitely as a scientific formula. In England the major emphasis is definitely placed upon earnings, and so it goes. However, we were not able to convince ourselves that in America, with its agriculture still in a new, and I should like to add, in an unstable condition, formulas could in any way be developed, at least at the moment, which would adequately cover such unexplored elements as location and home uses. It is granted that in so far as earnings alone are concerned we do have a reasonable amount of information which seems to make the use of a simple formula practicable. We submit to you, however, the belief that it is in keeping with the American agricultural tradition to decide that as yet an appraisal is most properly a *thought-through* personal *opinion* of the individual appraiser.

Consequently and again referring to basic value, if in the opinion of the appraiser the property has no worth derived from earnings he is then privileged to choose from what other source value is found to be present, the only limitation being that we say in the main he must choose from the remaining two broad elements of location and home uses. Within the past few months this definition of basic value has been subjected to as much of a test as possible. We are well aware it is a most important factor in our proposed system and if it is in error then there will be much to redo. It is being emphasized here at such length entirely with

the hope that if this topic proves of sufficient interest to the members of the American Farm Economic Association someone will be willing and able to point out our error, if one exists. Please remember, however, that we interpret the three elements of value in as broad a sense as possible, with the belief that there can be included under one or another all the factors with which rural appraisers are confronted or are in any way aware.

Typical Management

As another basic principle, may we now look more closely into what we term "the typical use of a property." This calls for the definition of earnings, taken again from the Committee's Report, and which we define as follows—

"Earnings constitutes that portion of the total income derived from the typical use of a property which can be assigned as payment for its use."

There is possibly no more difficult task in our system than the explanation to field men of what is meant by "typical." It is easy for these men to believe we mean "average," but which as you well know is not at all the case. We describe a typical tenant, for instance, as that tenant most likely to be found in numbers in a particular community. He represents the crowd, so to speak. In a progressive and well-informed community the typical tenant or operator will be well above the average. Conversely, the typical operator will fall into a low bracket if the community surrounding the farm is low grade. In deciding upon the "typical" we are necessarily limited to the consideration of a reasonably small and adjacent area. For it has become well established that in the main operators or tenants for particular farms tend to come from fairly close by, and that definite types of land tend to attract to it definite types of men. On splendid farms there will usually be found the highest type of operator, with the reverse true on poor lands.

Our so-called typical tenant is therefore most likely to farm the property in a typical manner. Consequently, in our earnings statement we base cropping systems and farming practices upon this anticipated typical handling of the land. The appraiser is told he may assume that the present tenant or operator of the land on the day of appraisal will not remain. The exact crops or methods used by the present tenant are not to be considered, unless they are found to be typical. Under certain conditions the appraiser may quite properly assume better rotations and therefore better yields than are at present the case, provided of course

the community nearby is of such quality that assuming the present operator will not remain a higher type operator may be expected to take it over.

It should be made clear, however, that in no way do we wish to break one well established appraising law, one possibly in more universal agreement than any other, which is that an appraiser is never justified in becoming a prophet. If I have stated the correct use of "typical" we believe our appraiser cannot be accused of unwarranted anticipation. We simply permit him to determine what type of operator the property is likely to have over a period of years, and then after a careful study of soil types to decide what crops this typical operator is likely to use, what yields should result, and of course what average annual expenses are likely to occur. In this manner an earnings statement is worked out, using the landlord-tenant division of crops typical to that community. Commodity prices based on an average over a chosen period of years (not a static one) are supplied the appraiser by the central office and once the net income to the landlord has been determined it is capitalized at a rate also furnished the appraiser by the central office so that ultimately the earnings value of the property is completed.

Location and Home Use Adjustments

Now that our earnings value has been established we come to the further elements of Location and Home Uses, both of which as previously stated should be considered in as broad a sense as possible. They are additional and contributing elements af value, which together with earnings value make up our basic value.

Possibly the foremost factor to emphasize again is that in our original definition an appraisal is an opinion. Up to this point the earnings stream only has contributed to our pool, and we now say to the appraiser that he should determine whether the additional streams of location and home uses contribute additional value or whether he considers they have already been accounted for. That is why we think of them as adjustments to the already established earnings value. Mechanically these are handled on a per acre basis, as we believe most appraisers are better able to visualize the effects of location and home uses in that manner rather than to judge them as additions or subtractions to money income. In another sense, it will be obvious to you that in their final analysis these elements tend to either raise or lower the rate of capitalization.

It has been pointed out to us many times by various field men

that possibly the word "adjustments" is not a happy one in the event that on very poor properties no positive earnings value can be secured. In other words the earnings value will be zero. When this condition arises we are then obliged to consider location and home uses in a much more positive sense and rather than to consider them as "adjustments" to earnings we seek actual value arising from them. It is conceivable in certain cases that the appraiser will find no actual earnings value and possibly no positive location value, in which event the only value he can establish will come strictly from home uses. We feel quite sure that these cases will be exceptional ones rather than the rule, but we likewise realize that whatever system is finally adopted it must be sufficiently comprehensive to be usable for all classes of property, surely not only the better ones. We have therefore tried out our blank on as poor properties as the Corn Belt will provide and we believe that when the appraiser seeks positive values from location and home uses, rather than considering them only as adjustments to earnings value, the form is both theoretically correct and actually usable.

It is likewise in connection with these location and home use factors that we feel sure no usable formula is available at this time in America. You are well aware of studies made by various universities showing the relationship between value and location, and again between value and population, but I think you will admit that with so shifting and changeable an agriculture it is doubtful whether any present value for wide application attaches to these studies. It is hoped, however, that as time goes on and more experience is gained, it will eventually be possible to at least move in the direction of a simple formula for these two factors. We have been pressed time and time again by our field men to at least give them guides by which to work, and our only answer at this time is that we still lack sufficient evidence for a formula and that because no two situations are ever exactly alike they will be obliged to weigh these influences as accurately and intelligently as possible and then to reflect them to us, based strictly on their thought-through individual opinion.

Kinds of Value

Once the three elements of earnings, location and home uses have been fully accounted for our basic value is established, and we are then ready to consider kinds of value. The moment has now arrived when appraisers for special purposes must leave the road along which we have all traveled up to and including basic

value. The appraiser for loans will take one road, if he seeks normal sale value he will take another, for forced sale value a third, and for tax and condemnation values a fourth and fifth. However, we believe we have definitely established an anchor (in basic value) from which it should be far easier than heretofore to arrive at the special value sought. Supporting reasons must of course be given why basic value is to be changed, either up or down, to the special value. A simple example will be forced sale value. The assumption is that the property must be immediately disposed of, probably for all cash. We therefore have a quite different set of circumstances as compared to those under which basic value was determined, for that was based for instance on typical management over a period of years, with average commodity prices. We are now obliged to consider the actually existing price level, and we are definitely limited in our field of possible buyers by the fact that the purchaser must pay all cash and do so within the next few weeks. Consequently, it is conceivable that forced sale value will be materially below basic value. Various other examples might be given if time permitted, but the chief point I wish to make clear is that we are struggling for a system which will permit all appraisers to travel the same road up to and including basic value and then, but not before then, to separate and travel the particular road which leads them to the particular kind of value they have been sent out to secure. *There is no one more important thought in our entire proposal than this one.*

Conclusion

I am well aware of the fact that my audience of this afternoon is not interested in the specific technicalities of actual appraising. I have endeavored not to burden you with too many details of that kind. However, it has seemed necessary to comment briefly on the theories actually proposed in our system, theories which we in turn have been obliged to explain time and time again to our field men in order that they may be very sure of the fundamental ideas behind this approach.

I have likewise said very little, if anything, on the outstanding need (as we see it) for a new approach to rural appraising in America. Surely everyone will admit, if he has had any practical contact with appraising in the past, that it has been very largely a "lump sum guess." Appraisers of farm lands were all too often supposed to have been born, not made. They were permitted to stand in the center of a Corn Belt quarter section, allow a number of factors to flow through their heads (no one knew how many or

how few) and then in a few moments to write down a figure at the bottom of a short appraisal form saying the value of that property was so and so. No one was able to dispute it, for no one other than the appraiser himself knew what exact factors had been considered or what weight had been given them.

Therefore, the proposed system at least has the outstanding virtue of obliging the appraiser to divide his final value into its component parts so that the reviewer or other interested parties may have some intelligent idea of what his process of mind has been. We like to think of our system as based first on facts and finally on conclusions. We like to think of it as a broken down or pulled apart system (like the parts of a clock). Then when the parts are replaced in the machine again, in their order, and have been given their proper weight, we should have an answer (or a final value) which tends at least to be a proven one.

Why a thought-through coordinated and comprehensive system of rural appraising has not been generally adopted long ago in America is no small mystery. The fact apparently remains that it has not been done, and so surely from the standpoint of importance to all debtor-creditor relationships is it not now an undertaking which may rightfully challenge the most intelligent and skillful thought we can possibly muster.

RESEARCH ON RURAL APPRAISAL PROBLEMS[1]

WILLIAM G. MURRAY
IOWA STATE COLLEGE

Events of the past few years have proved the inadequacy of our present appraisal system. With the Farm Credit Administration and some of the insurance companies looking to the agricultural experiment stations for assistance, the time has come for a concentrated attack on the problem.

Objectives

Before tackling the details of a research program it is desirable to formulate the objectives for such a study. Of these objectives the most important is that of introducing more factual measurement into the appraisal process. With the increase in information coming from the soil, crop and economic sciences it seems reasonable to expect appraisal to be made a matter of more scientific determination.

Another objective is that of determining whether a uniform appraisal of all land would be desirable. Farm land at present is valued for tax assessment purposes, for mortgage loans, and in some instances for purchase and sale. Would it be desirable to have a basic appraisal made of all farm land in the country? This basic appraisal, similar in many respects to land classification surveys, would apply only to the more permanent characteristics of the land such as topography, soil and drainage. This would be more than a soil survey. It would be an individual farm analysis.

It might be desirable to have appraisal certificates including the results of these basic appraisals made of individual farms. If, for example, an individual farm has been appraised and graded according to a certain classification, evidence of this, with the supporting facts, could be incorporated into a certificate that would be considered along with the abstract of title in granting a loan, assessment of taxes or sale of the land.

A third objective is that of placing land appraising on a professional basis. If, through research and continued emphasis on the problem of land valuation, a large amount of factual material is provided, this can serve as the basis for extensive training in land appraising. With large amounts of money involved in land transactions the need for a high type of appraisal service is apparent.

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economic Association, Chicago, December 28, 1934.
Journal Paper No. J274 of the Iowa Agricultural Experiment Station, Ames, Iowa. Project No. 20.

A first step, however, in bringing this about will be the development of a sound body of scientific principles that can be used in giving the prospective appraisers adequate training.

Two Methods

In carrying on appraisal research, two methods of study can be followed. The first and most common is to select a group of

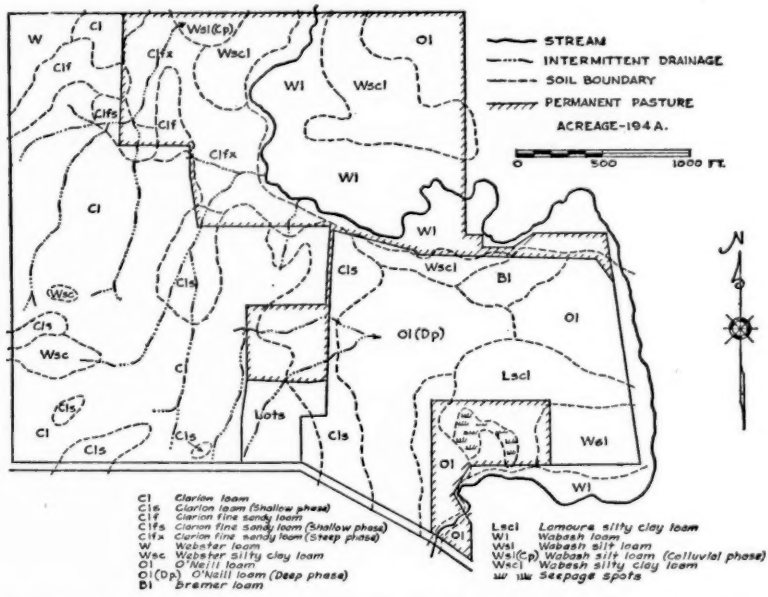

FIGURE 1. Soil Map of Farm A. Survey and Map by H. R. Meldrum of Soils Department, Iowa State College, and the author.

farms sold recently at voluntary or forced sale, or a group mortgaged to a certain loan agency. All available data regarding these farms are then analyzed to throw light on the success or failure of previous appraisals. The second method is a logical outgrowth of the first. When certain deficiencies have been detected through group studies, the next step is to analyze the appraisal process itself on individual farms in order to prevent the recurrence of these errors.

In the remainder of the discussion the second method will be used for the most part. The appraisal of an actual farm will be presented with reference to the kinds of research needed to improve this appraisal. In considering the valuation of this farm the subject matter will be divided into four parts, soils, crops, buildings, and prices.

Soils

There has not been in the past enough cooperation between soil and economic students of land appraisal. The soil specialists have gone their way with soil survey, soil type and erosion studies, while those in economics have contented themselves with research in foreclosures and sale values. There is a definite field of soil economics that should represent the union of these two groups on

SOIL TYPE INFORMATION FOR FARM A

Legend	Type	Acreage		Estimated Corn Yield
		Total	Tillable	
Cl	Clarion Loam	59	50	35 bu.
Cls	Clarion Loam (Shallow Phase)	19	13	20
Wl	Wabash Loam	23	0	
Cl	O'Neill Loam	17	10	30
OL(dp)	O'Neill Loam (deep phase)	16	16	35
WScl	Wabash Silty Clay Loam	14	2	35
Clfx	Clarion Fine Sandy Loam (steep phase)	12	0	
Lscl	Lamour Silty Clay Loam	10	6	35
Clf	Clarion Fine Sandy Loam	5	3	30
Wsl	Wabash Silt Loam	4	3	35
W	Webster Loam	3	3	45
Bl	Bremer Loam	3	3	45
WSc	Webster Silty Clay loam	3	3	45
Wsl(cp)	Wabash Silt Loam (colluvial phase)	2	0	
Clfs	Clarion Fine Sandy Loam (Shallow phase)	2	2	20
M	Muck	2	0	
		194	114	33 bu. aver.

the subject of land appraisals. A growing recognition of this field can be seen in recent studies.

An indication of the importance of soils in land valuation may be gained from an appraisal of an Iowa farm. The soil map of the farm which will be designated as Farm A appears in figure 1. Following the map is a list of the soil types on the farm with acreages and estimated corn yields. The time consumed in making a survey of soil like this by one man would be about four hours.

Why spend so much time on the examination of the soil on an individual farm? Why not use the county soil survey map if there is one? The answer is that the time spent in appraising soils on

individual farms is absolutely essential in many instances. It is a common error to believe that a county soil survey will suffice. For the county in which Farm A is located there is a soil survey. In figure 2 the soil map of the farm enlarged from the county map is presented. A comparison of figures 1 and 2 indicates the wide difference existing between an individual farm examination and county survey, there being 16 types differentiated in figure 1 and only 4 in figure 2. It should be pointed out that the county soil

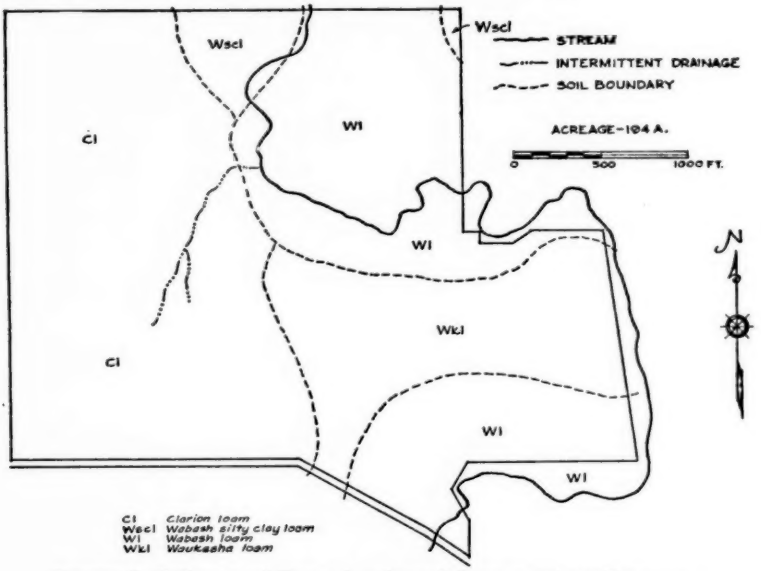

FIGURE 2. Soil map of Farm A enlarged from county soil survey.

survey is mapped on a scale of one inch to a mile, while the individual farm is mapped on a scale of eight inches to a mile.

Of more importance than the number of types, however, is the detailed information on types obtained in the individual analysis. In regard to the types listed for Farm A specific information was secured on the character of each one; for example, the Clarion loam on this farm was found to be below the average in productivity for Clarion loam. This would not have been indicated on the county soil survey map.

A number of soil bulletins have been published recently presenting productivity classifications of soil types.[2] These repre-

[2] Williams, C. B., Cobb, W. B., and Mann, H. B., "Agricultural Classification and Evaluations of North Carolina Soils" North Carolina, Agr. Exp. Sta., Bul. 293, 1934.
Storie, R. Earle, "An Index for Rating the Agricultural Value of Soils" California Agr. Exp. Sta., Bul. 556, 1933.
Bruce, O. C. and Metzger, J. E., "The Soils of Maryland, Productivity Classification", Maryland Agr. Exp. Sta., Bul. 351, 1933.
Brown, P. E., "Soil Types in Iowa and a Rating on the Basis of Their Potential Crop Producing Power", Mimeographed publication, Soils Department, Iowa State College, 1933.

sent the first step in the transition from the county soil surveys to individual farm studies. But these type classifications cannot replace individual farm analysis. Mr. H. R. Meldrum and the writer, in making field appraisals, found the Iowa type ratings could be used only as averages. On one farm a certain soil type might have a top covering of eight inches, while on another farm the same type might be practically gone because of excessive erosion. In another case poor management may have reduced the producing power of a soil type below what would be expected.

From what has been said it seems reasonable to expect soil specialists to follow their county soil surveys and type classifications with individual farm studies. Examples of this work can be found on the government irrigation projects. On the Pathfinder irrigation project in Western Nebraska the land has been examined in detail by soil workers. Out of this came classification of the land into five grades. This classification then was used directly in levying irrigation charges and indirectly for taxes, loans and sales.

Land use studies are another recent development pointing toward farm unit analysis. Including more than a soil classification they are in fact valuable base maps for appraisals. Some of the recent reports illustrate the unusually fine work that can be accomplished by coordination of specialists in different fields.[3]

Another outstanding piece of work is the method perfected for grading land for tax assessment purposes in North Dakota.[4] An explanation of the method is given as follows: "A detailed survey is made showing accurately the conditions of soil, lay of the land, stoniness, drainage ways, etc., on each 40-acre unit. Detailed information is necessary in order to yield a definite rating for each piece of land and to furnish a basis for formulating land utilization policies."[5]

Crops

It is difficult to separate this section on crops from the preceding one on soils. In measuring soil types the best yard stick is crop yield. Hence the method used is to determine the crop best adapted to a soil type and then estimate the crop yield for the area of the type concerned. An estimate of the corn yields on the

[3] Lewis, A. B., "An Economic Study of Land Utilization in Tompkins County, New York," Cornell University Agr. Exp. Sta., Bul. 590, 1934.
Weeks, David, Wieslander, A. E., and Hill, C. L., "The Utilization of El Dorado County Land," California Agr. Exp. Sta. Bul. 572, 1934.
Peck, Millard; Frank, Bernard and Eke, Paul A., "Economic Utilization of Marginal Lands in Nicholas and Webster Counties, W.Va.," U.S.D.A. in cooperation with West Virginia Agr. Exp. Sta., Tech. Bul. 303, 1932.

[4] Kellogg, Charles E., "A Method for the Classification of Rural Lands for Assessment in Western North Dakota," Journal of Land and Public Utility Economics, February, 1933.

[5] Ibid, page 15.

soil types on Farm A are presented in the section on soils.

There remains, however, the task of determining from the soil and yield information, a cropping system for the farm as a unit. Such a program is set up below.

CROPPING SYSTEM FOR FARM A[6]
TYPE OF FARMING—BEEF CATTLE RAISING AND FEEDING

Crop	Acres	Acre Yield	Total Production,
Corn	57	33 bu.	1881 bu.
Oats	28	30 bu.	840 bu.
Clover	29	1½ tons	36 tons
Pasture	70	2/5 unit[7]	28 units
Lots and road	10		
Total	194		
Crop land grade[8] = 3 –			
Pasture land grade[8] = 3 +			

To fill out a cropping program for a farm showing crop acres, yields, and total production is an easy matter. To make sure of the reliability of the yield estimates is another matter. This question of reliable yields is the crux of the appraisal problem as far as physical production is concerned. The difficulty has been to obtain yield estimates that could stand the test of time. In meeting this problem the best attack seems to be more emphasis on the factors back of yield, namely, soil, drainage, topography and climate, the factors briefly considered in the preceding section.

An indication of the importance of crop yields is furnished by Henry A. Wallace in an article entitled Comparative Land Values in Iowa.[9] He finds a correlation of corn acreage and yield with Census land values is highly significant.

Almost unlimited opportunities exist of refining the crude yield estimates used in past appraisals. The amount of data on individual farms made available through the AAA is staggering. There is in addition the Census material and a large body of data on individual farms coming from farm business records.

[6] This form of presenting land productivity is used quite extensively. For example the Land Bank Division of the Farm Credit Administration uses a form somewhat similar to this in their appraisal reports. For an excellent discussion of this subject see "Standards of Practice for Rural Appraisers," JOURNAL OF FARM ECONOMICS, Vol. XVI, No. 3, July, 1934. Note particularly appraisal form prepared by Hudson Burr and D. Howard Doane on page 524.

[7] A unit equals grazing for one cow for six months.

[8] The grades range from (1) for the best land to (5) for the poorest.

[9] Journal of Land and Public Utility Economics, Vol. 11, No. 4, Oct., 1926.

Test Farms

Finally, it would seem possible and desirable for either the agricultural experiment stations or lending agencies to have test farms in certain areas the yields and income from which would be carefully checked.[10] These farms would be operated by tenants or by owners in such a way that the management factor would be eliminated from the land return. With a long record of yields and income, these test farms would make an excellent training ground for prospective appraisers.

Buildings

Quite apart from crop production is the matter of buildings. Buildings present a different type of problem because they are a reproducible element of the farm. In theory the value of bare land is determined by the returns received from its use, while the value of buildings in the long run is determined by cost of production. But the cost of buildings with allowances for depreciation often times has no direct relation to the value of these buildings to a farm. The income on the buildings can be classed as a quasi-rent, that is, the return bears little, if any, relation to the original cost.[11] Consequently in valuation of buildings it is advisable to use both methods, figure a cost and a use value.

BUILDINGS ON FARM A

	Cost less Depreciation	Use Value
House	$1000	$1000
Barn	1800	1500
Corn Crib	700	700
Hog shed	500	300
Total	$4000	$3500

Estimated quasi-rent on buildings, i.e. additional returns from buildings over bare land—$200 per annum.

An example may help in bringing out the distinction between cost and use value. On a certain farm a barn costing $6000 had been erected which at the time of appraisal was valued at $4000 when allowances had been made for depreciation. This barn, however, was too big for the farm and was only partially used. Its use value was figured at $2500. This use value is important because the

[10] The use that can be made of land income data has been ably set forth by Clyde R. Chambers in "Relation of Land Income to Land Value," U.S.D.A., Dept. Bul. 1224, 1924.

[11] Marshall, Alfred, "Principles of Economics," Eighth Edition, New York, 1920, note on page 424.

amount of space and kind of building varies with different types of farming, a set of dairy buildings on a grain farm would obviously have a much lower value than the same set of buildings on a dairy farm.[12]

The buildings on Farm A conform, for the most part, to the type of farming for which the farm is suited. The barn, however, is of a dairy type when a barn for feeding beef cattle during the winter would be more appropriate.

On this subject of building valuation more study is needed.[13] Appraisal policy at present seems to be largely a matter of being conservative on building valuation. To put building values on a sound basis, research should be focused on the relationship of farming types to uses of buildings as well as on methods of appraising buildings on a cost less depreciation basis.

Prices

While many think the task of arriving at physical production an almost impossible job, it is relatively easy compared to the difficulties inherent in the process of converting production into dollar values. It is easy, of course, to take some price level and use it as the basis of loan policy, but it is another matter to justify the price level chosen on economic grounds.[14]

The conversion of physical production into dollar values for Farm A is presented below. It is worth noting that a highly significant bit of estimating is involved in determining the share of the crop going to the landlord. It is obvious that a slight shift in the apportionment will change the results materially. In areas where tenancy is uncommon the difficulty of obtaining a reliable estimate on the landlord's share is a serious matter. Here again research can point the way.

Taxes are a hard item to handle because it is impossible to forecast with accuracy what the taxes are going to be in the future. In some instances it is possible to obtain an idea of the general level of taxes for a few years ahead, because of local bond issues outstanding or of drainage assessments scheduled or of

---

[12] A research project has been suggested along this line in "Research in Farm Real Estate Values, Scope and Method" Social Science Research Council, Bul. 19, 1933. On page 70 of this report E. H. Wiecking discusses the project as follows: "A central problem in the analysis of this project involves valuation on the basis of cost of reproduction new less depreciation vs. valuation according to economic service actually rendered, as reflected in what the structures actually add to the going value of the farm as an economic unit. The latter needs to be more thoroughly explored."

[13] An example of this needed research on buildings is reported in a recent Missouri bulletin, "Farm Building Studies in Northwest Missouri," by J. C. Wooley, Missouri Agr. Exp. Sta., Bul. 218, 1934.

For discussion of building appraisal questions see "Standards of Practice for Rural Appraisers" op. cit. page 523.

[14] Some of the difficulties faced on this score have been discussed by the writer in an article entitled "The Land Appraisal Problem" appearing in the JOURNAL OF FARM ECONOMICS, October, 1934.

drainage work that will in all probability be done in the future. Here is a wide open field for research.

Additions and subtractions to productivity value for factors such as road and location are largely a matter of judgment with little factual basis for decision as yet. With time, however, the experienced guess may give way to measurement of known factors.

Experience Records

Out of foreclosure and tax delinquency records much can be gathered as to mistakes in previous appraisals. For example, numerous studies have pointed out the tendency of appraisers and assessors to over-value poor land and to under-value good land.[15]

VALUATION OF FARM A

Crop	Production	Landlord's Share		Prices	Total Value
		Per Cent	Amount		
Corn	1881 bu.	50%	940 bu.	$ .55	$ 517
Oats	840 bu.	40	336 bu.	.35	118
Clover	36 tons	50	18 tons	8.00	144
Pasture	28 units	—	—	8.75	245
Added return for buildings over bare land					200
Total return to landlord					$1224
Per Acre					$ 6.30
Less expenses					
Estimate taxes			$1.00 per acre		
Estimate upkeep, bldg.			.75 per acre		
Estimate lime and seed			.30 per acre		
Total			$2.05		$ 2.05
Net return per acre					$ 4.25
Productivity value (using mortgage interest rate of 5 per cent as a capitalization rate)					$ 85.00

It is quite likely that farmers themselves have fallen into this same error and that as a result Census values concentrate more than they should about the average. Still more research would be welcome on this point.

[15] For discussion of this point and references see "The Land Appraisal Problem" in JOURNAL OF FARM ECONOMICS, October, 1934. Additional references that bear out this tendency are: Hammar, Conrad, H., "The Accuracy and Flexibility of Rural Real Estate Assessment in Missouri," Missouri Agr. Exp. Sta., Bul. 169, 1932. Hudson, S. C., "Assessment of Farm Property in Ontario," The Economic Annalist, Department of Agriculture, Ottawa, Vol. IV, No. 2, June 1934. Wallace, Henry A., "Comparative Land Values in Iowa," Journal of Land and Public Utility Economics, October, 1926. In this article the statement is made that insurance companies appeared to be lending too much on the low-value land in Iowa. Subsequent foreclosure records prove this to have been the case.

Conclusion

From what has been said it is clear that more research in land appraisal is required. This means coordinated research in such fields as soils, land classification, crop yields, farm buildings, farm management, and prices. From the studies mentioned in this discussion it is evident that considerable research has been done but when the importance of the land value problem is grasped, the research done thus far has to be recognized as only a beginning.

The need for more research in land appraisal is a challenge to the workers in the fields involved. It is a challenge to lay the ground work for a more scientific method of land valuation, to provide the material for training of professional appraisers and finally to assist in the systematic appraisal and classification of all farm land as the basis for taxation, loans, utilization, and purchase and sale.

AGRICULTURAL COLLEGE COURSES FOR RURAL APPRAISERS[1]

ROBERT R. HUDELSON
UNIVERSITY OF ILLINOIS

The content of this paper is based in part upon experience in giving a course in farm appraisals at the College of Agriculture, University of Illinois, beginning in the fall of 1933. It appeared at that time that a course sufficiently comprehensive to cover the very broad and intricate field of farm appraisals could best be given by a committee representing the various departments of the College. That plan has been followed and we believe has been justified in the results secured. Not only have members of the committee had a very active part in the teaching of this course but other members of the staff have contributed.

Objective of Farm Appraisal Courses

The objective of appraisal courses is held to be the building of a foundation for experience in farm appraising, to coordinate a broad training in agriculture and to assist in forming a sense of values with sound perspective especially as regards farm real estate.

Character in Appraisers

In line with the findings of the National Joint Committee on Rural Credits, it seems appropriate that a word should be said concerning character requirements for farm appraisers. Since so much responsibility is placed upon appraisers in making investments in land, in granting loans, in assessing taxes or other purposes for which appraisals are made, there is obviously a necessity for a high degree of integrity. This would seem to require intellectual honesty to a degree that departure from fact is looked upon as a major offense to moral, legal and ethical principles. Appraisers, to be trusted completely, must be willing to suffer financial embarrassment rather than to leave a misleading impression. They must adhere to the old fashioned motto: "My word is as good as my bond." Emerson expresses this in his essay on "Character" as follows: "The people know that they need in their representative much more than talent, namely, the power to make his talent trusted" . . . "so that the most confident and the most violent persons learn that here is resistance on which

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economic Association, Chicago, December 28, 1934.

both impudence and terror are wasted, namely, faith in a fact." ..."No change of circumstance can repair a defect of character."

Native Ability

In addition to character which may be imparted to the individual by proper educational environment there is a genuine need for certain native endowments to make a good appraiser. Since there is an almost infinite number of factors that must be brought into the final opinion or judgment which constitutes an appraisal, it follows that there should be a very high degree of intelligence. This quality must be motivated by an intellectual curiosity that leads to a constant desire to know as much as possible in a number of broad fields. There is need for great natural power of observation in physical, biological, economic and social fields. Because the appraiser's job cannot be brought to him, but requires that he go to it under all conditions, there is a need for great physical stamina in order that the individual may do a difficult job of concentration regardless of weather and discomfort. Finally, it is highly desirable that the individual have a pleasing confidence-inspiring personality, capable of winning the good will and legitimate confidence of those in possession of desired information.

Training Preparatory to College Appraisal Courses

Given character and native ability, there is a considerable amount of training in preliminary courses which students should have before the keystone or cap-sheaf course in farm appraisals. These courses should be in addition to actual farm experience gained after maturity and in a position of business responsibility.

It may be helpful to classify the course material which should be taken preliminary to the specific work in farm appraisals under the usual subject matter fields.

Economics

In the field of general economics, it seems clear that the student should have a working knowledge of economic theory, particularly the theories of value and of rent, and the principles of marginal utility and comparative advantage.

To follow the factors fundamental to changes in price, a course in money and banking is greatly to be desired. Work in economic history will keep the individual from following current short-time trends too freely in his valuations. There should be a general understanding of the principles underlying investments and rates of capitalization on different kinds of securities. Finally, it will

be of real assistance to an appraiser if he has a reasonable knowledge of statistical methods and the application of statistics to price and production series.

Farm Management

In farm management, the prospective appraiser should be thoroughly familiar with methods of computing farm income from farm accounts, surveys and cost records. It will be helpful to know the methods used in constructing such farm income series as are in existence including the series published currently by the Bureau of Agricultural Economics. In order that there may be a clear understanding of the meaning of gross and net rents, some training in lease forms and rates of rental in the different type of farming areas is to be desired. If the individual has knowledge of the main factors causing variation in gross and net farm income and net rent, he will be better prepared to observe these factors on individual farms. Since the most detailed type of income record is that of cost accounts there should be some appreciation of the use of the factors revealed in these accounts, particularly as they form a basis on which to estimate the various income and expense factors. This knowledge of cost figures should include some application to marketing costs. From many points of view, the most suitable boundaries within which to make farm income studies are those enclosing type-of-farming areas. These have now been mapped for most of the agricultural states. Within the type of farming area there is a degree of uniformity in cropping systems, combinations of livestock, marketing conditions and climatic factors. To a lesser degree there is likely to be some uniformity in soil types. For these reasons it seems advisable to build a statistical foundation of income and rent series and to classify computations of farm income and value by type-of-farming areas. In view of these facts, it is desirable that the work in farm management include a knowledge of type of farming areas.

Geology

It is scarcely to be expected, with the many other requirements, that a prospective appraiser should secure a thorough preparation in geology, yet it is obvious that he should have an understanding of the surface geology of the principal geological areas in which he expects to make appraisals. He should also know the principal mineral areas and the probabilities of finding mineral deposits in areas to be covered.

Agronomy

The experience of the writer in actual appraisal work, leads to the conclusion that there is no field of preparatory work more important than that of soil genesis and soil classification. To one who has seen the individual with only local knowledge of soil conditions transported into other areas where he attempted to pass judgment on soil conditions, this statement has great significance. It is through the principles underlying soil genesis, and the facts which underlie soil classification as now handled in soil surveying and mapping, that the individual knows what to look for in any given set of climatic and parent soil material conditions. Considerable areas of the United States have been mapped in soil surveys and the person who has sufficient training in this field to interpret soil maps, has a great advantage. Even if soil maps are not available for the particular area, the facts and principles included in soil classification serve to explain the conditions observed and to sharpen the powers of observation wherever soils are examined. There is much in the relation of climate to soil genesis and productivity, which should be included in basic soils courses.

Preparatory work in agronomy should include a working knowledge of crop requirements and crop hazards, both general and with respect to particular crops. There should be trained ability to observe native and cultivated vegetation, to read the story which plants are always telling to the person who reads their language. Weeds, being uninvited plants, have much to say as to the soil conditions under which they make their invasion. Ability to identify weeds and know their habits is also important in judging when and where they become a menace to crop production.

Animal and Dairy Husbandry

It is not within the range of this paper to discuss training in the valuation of farm chattels and growing crops. It will, therefore, touch lightly on animal and dairy husbandry. Yet, the student should know enough of these fields to have good judgment concerning the appropriateness of the kinds and numbers of livestock on a particular farm. He should know enough of the principles of feeding to judge the suitability of feed supplies and pasture areas to the particular farm business under examination. He should realize the importance of sanitation as a factor in animal production and to judge whether the conditions as he sees them on the farm are sound in this regard. He should be suffi-

ciently trained in animal and dairy husbandry to know when the buildings and equipment are suitable to economical production.

Horticulture

In the field of horticulture also, there is neither time nor need to discuss detailed problems. The appraiser should, however, know enough of the basic facts and principles of fruit and vegetable production to know when he sees a sensible and economic layout for the production of horticultural commodities. He should know what constitute good soils and sites and something of the cost of developing orchard and small fruit plantations. This knowledge should extend to special production hazards including an acquaintance with particular areas subject to disease, insect and climatic threats. The appraiser should know a well cared for and productive fruit or vegetable plantation when he sees one.

Marketing

It is very desirable that the individual should have some foundation in marketing, particularly with respect to the effect of production conditions on quality and grade of product. He should, in general, know the central and other important markets for specific products and should have some appreciation of marketing costs, market and transportation facilities. Closely related to marketing, is a need for some basic knowledge of the price history of important commodities, sources of price data, differences between retail, wholesale and farm prices and methods of handling price statistics.

Subject Matter to be Included in a Farm Appraisal Course to Students with Adequate Preparation

Perhaps it is only at this point that the discussion comes to the actual subject assigned, but it appears desirable that we have a common understanding of the preparation assumed. I shall refrain from repeating the objectives of training in farm appraisals. It is advisable, however, that such facts be brought in as a starting point for a specific course in appraisals. There should be included at this point also a background of information concerning the various purposes for which appraisals are made, such as purchase and sale, taxation, mortgage lending, condemnation suits, damage suits, division of estates and the underwriting of bond issues for drainage irrigation and other improvements. In addition, it seems helpful to give the student a clear understanding of the conditions under which appraisals are made.

The faint-hearted should know in the beginning that appraisal work must be done in practically all weather conditions except when snow covers the ground. He should realize that interested parties are usually on hand with a desire to establish a bias favorable to themselves. He should know that these parties will sometimes suggest that employment for the appraiser depends upon a favorable valuation whether that be biased upward or downward, depending upon the motive of the interested party. There will be appeals to sympathy for a borrower, tax payer, seller or heir. There will be attempts to make it difficult for the appraiser to see the least attractive features of the property or to interview those not favorable to valuation in line with the bias of the interested party.

Maps

The farm appraisals course may well include training in the fundamentals of map reading and map construction as well as familiarity with the available maps which are useful to appraisers. This should include plat books, topographic maps, maps giving the boundaries of taxing municipalities, road maps, type of farming maps and most important of all, soil survey maps. The appraiser should be schooled in finding his location on a particular map. He should know how to find the location of points by intersection and traverse and in general he should have a better and more usable knowledge of this field than is commonly acquired by students in agriculture. This training should include field and laboratory work to the point where the individual is really at home in the use of maps. The mapping methods of soil survey workers and the more rapid methods of the artillery and cavalry forces of the United States will prove suggestive.

Climatic Data

The course may well include training in the use of climatic data and climatic maps. There should be a working knowledge of the length of growing seasons, regularity of frost dates, amount and distribution of rainfall, including drought periods and periods of excessive rain in relation to the growing season in different areas. There should also be an understanding of temperature conditions, including average figures and departure from average as they affect agricultural production.

Production Data

An efficient appraiser before going to the field will know how to find and make use of production data for any area in which he

proposes to work. This should include acreages and yields of all of the important crops in the area, including fruits and vegetables. If possible, these data should be reduced to a township basis, or if this is not possible in some areas, then to a county basis. The same kind of data for kinds, numbers and quality of livestock, including livestock products such as eggs and dairy commodities, are usually available and should be known.

Soils and Topography

There has been indicated above some emphasis on the need for a thorough preparation in soils, particularly with reference to soil genesis and classification. Assuming this preparation, there should be practice in the use of county soil maps, or where these are not available such general reconnaissance soil maps as are published in Bennett's book on Soils of the Southern States and general soil maps which a good many of the states have made available. A student should not only know soil maps but should be familiar with soil types as given in descriptive literature. Unless all members of the class have had sufficient grounding in this field there should be some review of the main facts and principles of soil classification including the surface geology and climatic factors involved. Some of the newer work in the construction of productivity ratings for soils should be presented in farm appraisal courses. There should be field and laboratory work in these subjects including practice in the use and significance of tests for phosphate, lime requirement, alkali and any other practical field tests. Some tests too complex for field use such as that for exchangeable bases should be understood.

Native and Cultivated Vegetation Including Weeds

Soil survey men have long used the native vegetation as an indication of underlying soils. The appraiser should follow their example and should be prepared for accurate observation along this line. He should know the different plants associated with particular soil conditions and what the variation in size, color and proportion in the plant mean. This will apply to trees, shrubs, grass, weeds, in fact any plants which come in of their own accord. In addition he should be able to read the story of growing crops and of dead crop residues which he will see on the land at different seasons. Finally, he should be prepared to identify all of the more noxious weeds, not only in his own state but in the other states where his work in appraisal may take him. He should know

something of the geographic distribution of these weeds and where to be on his guard for specific weed hazards.

Farm Management

In the field of farm management we are also assuming a reasonable degree of preparation as outlined above, but in addition there are some facts of farm management which are more specifically usable by farm appraisers than others. These should be emphasized in an appraisal course. There may well be a review of the farming type areas as a background for estimating the proportion and quantity of the main agricultural products grown on farms of a particular area. There should be emphasis on the typical cropping systems for type-of-farming areas with methods of computing gross production, including harvested field crops, pasture, fruit, vegetables and even products of the woodlot. There should be familiarity with characteristic combinations of livestock, including poultry, Following this there is need for further research as well as training in methods of translating a given feed supply into quantities of livestock and livestock products. It is admitted that this cannot be done with any great degree of accuracy at the present time, but if we are to gain facility in the use of estimated income, it seems worth while to build a foundation along this line. A start was made in a mimeographed publication of the Department of Farm Management at the University of Illinois, published in the fall of 1931. The tables included in that publication have been used by field men in planning individual farms and they form a starting point for the estimation of gross animal production on a particular farm. Following the work in estimating gross crop and livestock production there should be some practice in translating this into gross money income. Starting from this point there is need for some practice in reducing gross income to net income. To do this requires a study of general farm accounts and cost accounts which will give an understanding of the deductions necessary in arriving at net income. This work should be extended to similar use of farm income surveys and finally to simple estimates on farms where the actual record of production is known. There is need also for practice in computing gross and net rent under the leases common to the area. Finally, it is logical to introduce at this point the methods of capitalizing net income or net rent, to translate these figures into farm value. There should be a clear understanding of the difficulties involved and the large effects which a small difference in rate of capitalization or estimated income can make. This

is a good place to introduce the common formula for arriving at value on an income-bearing property. The work of Chambers will be helpful at this point. Special cost and income conditions found in unusual areas such as drainage and irrigation districts should not be overlooked.

If time permits, it seems advisable to add some practice in the valuation of life estates and estates for limited periods. The farm management work should also include some instruction in the relation of buildings and equipment to income and value. The appraiser should be familiar with the point of view that buildings may be either insufficient or excessive on any particular farm. He should have a basis for sound judgment as to when these conditions prevail. There is scarcely any aspect of practical farm appraising more difficult than that of measuring or estimating the relation of buildings to income.

Prices and Statistics

If the student has a foundation in economic history and price statistics there may still be introduced into a course in farm appraisals, some specific information on the history of farm real estate prices shown by the best available series for each type-of-farming area. Associated with this there will need to be selected information on the history of farm commodity prices. The relation of money and credit conditions as well as other business cycle factors may well be reviewed and associated with farm real estate prices. The student should be made familiar with the sources of farm real estate price data and methods of handling these data to establish farm real estate price trends and to know how to measure the departure from trend for a particular case. There should be a good understanding of the use and possible misuse of averages. Certainly averages can be misleading if they are taken to represent the individual case. This does not mean that they are not very helpful if taken for a base from which to measure the individual case.

Taxation in Relation to Farm Real Estate Values

Taxes form one of the universal and variable deductions from income. It is clear to the experienced appraiser that there are cases in which the tax absorbs all of what would otherwise be the net income for capitalization, and the appraiser who does not appreciate the significance of this is liable to serious error. At present there is difficulty in locating all of the taxing municipal-

ities and getting from them the actual and contingent tax burden. There should be familiarity with legal tax limits and the various manifestations of bonded indebtedness. This will apply particularly to drainage, levee, irrigation and other improvement districts. The prospective appraiser should be schooled in the use of tax records and should know where and how to find them. He should know something of tax penalties and tax sales. He should be acquainted with the problem areas in taxation. Training in this field should involve field and laboratory work, including one or more trips to the county court house where the individual may be required to look up the tax situation with respect to specific properties.

Legal Documents

Although farm appraisers are not called upon to pass final judgment on land titles, they should have a general knowledge of deeds, mortgages, abstracts and the main considerations with respect to land titles. Probably this will have to be limited in most cases to one or two lectures by one qualified to handle these subjects. At the University of Illinois this has been done by a member of the staff of the Law School.

Community Features

Appraisers have long known the general relationship of community factors to farm home value. They know that this has a practical bearing on the price which a farm will bring. It is well, therefore, to bring into a course in farm appraisals some material on the significance of:

1. Nationality and type of citizenship.
2. Church and school facilities and community centers.
3. Size of town, kind of road and distance from town in relation to costs and time requirements for marketing.
4. Appearance of buildings, landscaping and other aesthetic features.

Agricultural Engineering

The specific work in agricultural engineering may well include preparatory lecture and field work on drainage, erosion, farm buildings and water supplies. In drainage the appraiser should have enough background to give him sound judgment on type of installation, signs of poor drainage and costs of construction and upkeep. He should be quick to observe the indications of overflow. He should be a reasonably good judge of the adequacy of levees

particularly with reference to their maintenance and cost. Associated with this is a need for some foundation from which to judge pumping systems, where they are used in connection with levees. He should know the main types of installation such as steam, Diesel, and electric plants. With this he may well be informed on their relative costs for installation and maintenance. It is doubtful whether appraisers in the past have had sufficient understanding of soil erosion. There is need, therefore, for some specific training in judging the relation of slope, cover and type of soil, to erosion. There should be some understanding of terraces and other means of erosion control.

Although some appraisers may never be called upon to examine farms in irrigated districts, in any class there are likely to be those who will later encounter problems in this field. There should, therefore be some basis of judgment on water sources, types of reservoir and ditch construction, water requirements, methods of spreading water and relation of irrigation to drainage and alkali accumulation. The engineering training should include some instruction as to the length of life of different types of building construction together with their costs for construction and maintenance. The student should be given some practice in the estimation of the length of life and rates of depreciation on different types of improvements. Finally, the engineering work may well include some study of water supplies including kinds of wells, cost of well construction, cost of maintenance and methods of judging the adequacy of water supply. There should be included some material on areas having serious problems of water supply.

General

Appraisal courses should end in the second semester so that weather conditions will permit finishing with a liberal use of field practice in the making of appraisal reports. The services of reliable practicing appraisers should be secured to lead field trips and to demonstrate the making of appraisals according to the best methods in actual use. This includes practice in the use of different loan application blanks and appraisal report forms.

Since so many factors are involved in the final judgment as to the value of farms, the temptation in setting up any course of this kind is toward including so much detail as to be confusing to the student. There is need to select material carefully and to present only that which has a definite relationship to farm valuation. There will be less confusion if a separate course carries the study of those elements which are primarily not valuation ele-

ments but are more definitely included as credit factors. There seems to be need for a related course in farm credit in which to present such factors as the integrity, industry, judgment, physical ability, etc., of the farmer and his family. Unless the student is expected to take work along these lines there should be introduced into the course in farm appraisals the best available material to assist in forming a judgment on the percentage of value that should be recommended for any particular borrower. Failure to include such material in this paper is not due to any feeling that such factors are not important. They are very important but it seems likely that our thinking will be clearer and our work less confusing if we draw a clear line of distinction between the factors of valuation and the factors of credit. There is ample justification in a practical way for asking the appraiser who works for a lending organization to do two things, namely, to form a sound judgment of value and to recommend the percentage of value that can safely be loaned to a particular borrower.

Finally, there is need to emphasize the fact that no course given in college will turn out finished appraisers. Some kind of an apprenticeship will have to be served and not every candidate passed in an appraisal course will prove to have the necessary qualifications. Such a course, as has been outlined, however, will serve a useful purpose in coordinating almost the entire course of instruction in agriculture as it is given in most of the Land Grant Colleges and will give the prospective appraiser a helpful foundation for experience.

PROBABLE SOCIAL EFFECTS OF PURCHASING SUBMARGINAL LAND IN THE GREAT PLAINS

PAUL H. LANDIS

I. The Problem

The necessity for the purchase of submarginal lands can be traced to our past national economy which failed to evaluate natural resources in terms of their potential value for providing for the happiness and prosperity of the individual. In the great plains section it points more specifically to the land settlement policy of our Federal Government, a policy which was designed to be beneficial to the home seeker but one which failed to take into account the limitations of the land which was offered for homesteading. In purchasing submarginal areas, the government will repossess land, much of which was turned over to private ownership only 25 or 30 years ago.

A prime consideration at the outset, if we are to understand the probable social effects of the present governmental policy, is an appreciation of present conditions. The land was originally divided in the checker-board fashion and dispensed to families according to homestead provisions which required a period of residence and certain improvements before title was given. The areas most recently settled were advertised as: "The last of the public domain," "the last west," "the last frontier." "Will your son own a homestead?" was the slogan. From every walk of life people hurried into the homestead regions to break up the land. There were school teachers, waiters, the butcher, the baker, and the candlestick maker, as well as some farmers. Many residents did not stay long enough to get title, others who acquired titles sold their homesteads to ranchers, to more ambitious settlers and to speculators. Since the time of settlement the density of population has fluctuated rather markedly, waves of population having come and receded in close correlation with the rainfall cycles. In times of drought the marginal man has been forced out. He went on west to seek new territory or went back home to father's roof, leaving behind for ranchers and permanent settlers the ruins of his enterprise. At such times ranchers with capital, and large-scale farmers laid hold of the land. Some purchased it, some leased it, while others used it as their own without acquiring legal rights. During wet cycles population increased and so-called "suit-case farmers" came in and plowed the soil to raise flax,

wheat, or corn in the hope that they could get rich quick from farming cheap land.

The social organizations of the areas now being considered for purchase in the great plains have been unsuited to them. The institutions—roads, churches, schools and local units of government—of more densely populated communities were superimposed upon the dry land farming and ranching country. Moreover, in times of prosperity these institutions were greatly overdeveloped. The land did not possess the ability to pay for them so that, throughout most of the area, rentals for grazing land will not now pay taxes. Moreover, in the submarginal areas, outside agencies have borne the cost of local institutions—schools and roads have obtained state aid, roads have had federal aid, churches have been given mission funds. Despite outside assistance, counties have been bonded heavily, and most public institutions have been paying teachers and officials by warrants. Individuals likewise have been dependent—government seed and feed loans, Red Cross relief, private charity, county poor relief, and now federal relief, have saved people from acute economic distress during the concurrent drouths.

The present crisis has produced a situation which has not permitted the spontaneous and natural adjustment of population which occurred in the depressions and drouths of other years. Cities have been driving their surplus populations to the farm. Parents and relatives in the central west can no longer accept the stranded agriculturalist back home from the plains for they too are facing difficulties. The frontier to the westward has already been exploited. There is no new land at hand. Rumors of opportunity which usually float about in times of crises are not heard. People have been advised to stay where they are. Then, there is the added incentive to staying in one's own community regardless of dire circumstances to obtain the certain benefits which federal relief has provided through the C.W.A., P.W.A., A.A.A., and F.E.R.A. The time is ripe for a program which will, through the use of public funds, again restore to the Federal Government a public domain which is not sufficiently productive for the use to which it is necessarily put under private ownership, and which will at the same time release a needy group from a hopeless struggle.

The implications to individuals and communities of the acquisition of submarginal land by public agencies we cannot fully predict. It must be recognized at the outset, in dealing with this problem, that the social effects will depend somewhat upon the

extent to which land is purchased, the degree to which purchase areas are contiguous, the governmental policies in using the public domain acquired, and the disposition of revenue acquired, especially as such disposition affects local units of government and local social institutions.

II. Readjustments of Population

The task of caring for families removed is one of the immediate problems involved. From this angle the matter of purchasing submarginal land involves more than a reduction in crop acreages and surpluses and the economic use of the land. It becomes a human problem. Many of the residents on these lands have always had a precarious existence. If they are to be moved and must readjust themselves to another environment, they deserve more of an opportunity than they have had for many of them came to the area without a fair chance to evaluate conditions. Where can this opportunity be found? Preliminary estimates indicate that a considerable portion of the people to be removed from purchase areas plan to go elsewhere on their own initiative, while others wish to be placed on government projects.[1] In case of either alternative there are some serious problems to be faced.

First, with regard to those who are to go out on their own initiative. Can they in the near future find any greater opportunity than that they now have in dry-land farming? Will industry welcome them? Are there desirable agricultural lands awaiting their tenure, or will they drift to the city to fill the ranks of the unemployed or further west to be victimized again by practically worthless land which is offered at cheap prices? (Government publicity regarding the quality of private and corporation lands offered for sale might help here.) It is hard to believe that mobile groups can on their own initiative find sufficient places of opportunity that excel those they now have on the dry-land farms. If we could hope for the immediate and complete recovery of industry and of commercial agriculture, the situation would be changed. Some individuals will, no doubt, satisfactorily locate themselves of their own initiative when freed from their land holdings.

Second, in caring for those to be rehabilitated on government projects, several perplexing problems present themselves. There is an administrative difficulty. The optioning of submarginal lands has progressed much more rapidly than the development of resettlement projects. For this reason the resettlement pro-

[1] Tentative estimates were given the writer during the summer in interviews with men in charge of projects in Montana and South Dakota.

gram has been delayed and most of those on submarginal lands must face another period of relief acceptance which will further weaken their morale and break down their initiative. Furthermore, the resettlement projects now planned are not sufficiently extensive to care for those removed from submarginal land who desire to be rehabilitated and those of other classes who desire governmental aid along this line. In fact, whereas the submarginal land purchase program is relatively well established, the matter of resettlement is still very much in an experimental stage. To adjust this lag will take considerable administrative action. And yet, the development of policy concerning rehabilitation on government tracts is a program which no state rehabilitation group in this section cares to rush into. They prefer to experiment and to act conservatively, in order that they may test out the program and put it on a secure foundation both from an economic and a social standpoint.

Should government projects be provided for the group that wishes to be rehabilitated, a reacculturation problem of considerable magnitude must be faced. In the dry-farming area rehabilitation is planned through a more intensive settlement of land in the more productive areas of the states, and in irrigated sections.

In either case an educational program must be instituted, if success is to be attained. This is especially true where the dryland farmer is placed on irrigated tracts, for ditch-farming presents a type of culture that is entirely foreign to him. He is accustomed to seasonal labor and uncertain returns; his is a large-scale enterprise, involving the extensive use of machinery and land. Irrigation demands year-round vigilance over a small tract which must be intensively and scientifically used if capital costs are to be met and profits are to be realized. The reeducation for farming small tracts on non-irrigated, but productive lands, in the better areas of the states, is not quite so imperative but is essential.

Where rehabilitation projects combine farming with industrial occupations the requirements for becoming rehabituated to a new life pattern are even more demanding. This form of organization may create a communal life to which the isolated plains settler is not accustomed. He may be able to adapt himself but problems are certain to arise in his so doing.

We also need to ask ourselves whether these resettlement projects may not be abandoned when industry and commercial agriculture revive. We may find that a dole is cheaper and perhaps more desirable in handling a part of the population removed. Some of them, of course, are not capable of rehabilitation because

of age or other incapacity. For these relief or partial subsistence is essential.

The problem of providing practical rehabilitation projects in the great plains is a large one. The program has been planned as a state activity with no provisions for the interstate movement of peoples by the government. If this policy is adhered to, resettlement areas that are capable of satisfactorily providing for a greater population than they now have must be found within each respective state. Perhaps this can be done, but it will require extensive preliminary research in soils, irrigation possibilities, in understanding the industries that can be profitably established in the region for supplemental employment, and in the best form of social organizations for a resettled rural people. A proper background assumes, then, extensive research and probably requires a preliminary period of careful experimentation in resettlement.

III. Readjustments in Local Communty Functions

Local community institutions, as has been intimated, are those adapted specifically to more densely settled areas. These communities, despite the excessive tax rates, have not been able to support their institutions without aid from outside agencies. We, in America, have assumed that every community has a right to those institutions required for meeting minimum cultural standards, whether it can pay for them or not. Since this is true the movement of population to more favorable areas where they can support their own institutions seems desirable.

The extent to which local institutions can be done away with depends largely upon the extent of areas purchased. Some of the projects now quite well developed will do away with a large number of rural schools, considerable highway mileage, and with township units of government. Upon the completion of one South Dakota project, 18 rural schools will be closed. This will mean a reduced cost for local institutions,[2] and at the same time will not lower the quality of community services. Whether local tax rates are reduced will depend upon the income realized from the public domain by the community. In local districts where the land is not all purchased by the government the problem of transporting the school children of remaining families must be faced. Furthermore these families will be more completely isolated than before even though their economic outlook should be much improved.

[2] Hermstad, Oscar, Report of Nov. 10, 1934 on South Dakota, Bad Lands—Fall River Project.

Much of the land to be acquired is submarginal only from the standpoint of crop production, and from the standpoint of intensive grazing. These lands are productive where a proper grazing system is employed, as is now done in a few counties where lack of railroad facilities have kept the wheat farmer[3] out. Acquired lands in several districts are to be turned into grazing reserves, and leased to grazing organizations. From the rental of these lands an income will be produced, over a long period a larger income no doubt will be realized than has been realized in the past, both to private individuals renting the land, and to the nation. Whether local units of government realize an income depends upon the policy decided upon and maintained by the Federal Government. Should half of the rental from the land go to local counties, should they have all of it, or should they have none of it? If the local units of government could be assured over a long period of years of at least half of the rental income from retired lands, which seems to be the favored plan at present, they would probably have a more secure income than they have had in the past, providing rentals are collected, for even though the tax rates have been higher than rental rates, the counties have accumulated heavy debts. Of course taxes have been delinquent to a considerable degree.

Should the local communities be assured a large part of their income from the Federal Government one can anticipate certain administrative difficulties. Almost invariably where outside organizations pay a high proportionate share of tax revenues careless spending, corrupt patronage and graft are increased, primarily because local residents do not feel that they provide the funds.

Where land is retired for game reserves, experimental purposes, forest reserves, tree planting, and other uses no immediate income will be realized, yet the land will not be taxable. Here local communities are going to be concerned not only with the tax revenue problem but also with the policy adopted regarding bonded indebtedness. If a proportionate share of existing liabilities is not assumed by the government in counties where large areas are purchased, the remaining property will be virtually confiscated. From the standpoint of local units of government and of local institutions these problems are paramount. On the

[3] Harding County, South Dakota is an excellent example. The writer studied this county, along with selected counties in four states in the northwestern great plains during the summer of 1934. Despite the drought, considerable pasture was available, more than in any other area in South Dakota, and few ranchers were on relief rolls. The wheat farmers in the northeastern part of the county who were within driving distance of a railroad in North Dakota constituted an abnormally large portion of the relief rolls as of June, 1934.

other hand, there is no reason why local institutions and local government should continue in some areas other than that county officials and others desire to have them do so.

From field experience, I have concluded that the individual that is the most exercised by the purchase of submarginal areas is the trade center merchant. He sees as a consequence of this program the reduction of population in his trade area, the decline of business and of the town itself, and perhaps his ultimate ruin. Perhaps his viewpoint should not be considered seriously due to his vested interests, but at least some resistance against the program will be registered by him. It may be that the government should and will assist in some manner the stranded small town merchant in areas where his trade area has been greatly reduced or destroyed. Many of the business activities, however, in these towns have survived to date only because the government aid in the form of relief to their customers. A better business will probably be realized by those merchants whose businesses survive the readjustment.

IV. Social Benefits

Among the social benefits resulting from the purchase of submarginal lands, human welfare is of first importance. I quote Mr. Tolley:[4]

> And after all the main reasons for retiring the poorest land from farm production are reasons of human welfare. Such land *does* add *something* to commercial farm production. But our main concern with it in a rational program of land use is to stop the wastage of *human* effort that occurs when farm families try to make a living from it.
>
> The people now operating such farms, and their children, are condemned to a worse than peasant standard of living. It would be sensible as well as decent to give such people an opportunity, to *sell* and move to where they will have a better chance to live at an American Standard.

The conservation of natural resources is of outstanding importance, especially in lands adapted to grazing. The past land use policy has been one of the most ruthless exploitation. Some lands were farmed, even though only one crop was obtained in six years. The soil has been pulverized by drought and eroded by winds in a most wasteful manner. Moreover, grazing areas have been seriously damaged. Lease holders, even though they may have wished to keep reserve pastures, and graze all of the holdings properly could not do so, for in times of stress other ranchers would outbid them and lease the pastures which they had conserved. This has forced ranchers to overgraze all of their leased

[4] A radio talk by H. R. Tolley, "Land Use and Human Welfare: A Progress Report," press release of the A.A.A., Sept. 21, 1934.

land. Overgrazed land does not produce well and is subject to a high degree of erosion. The use of the new public domain turned to grazing can be properly regulated.

The income policy adopted and adhered to with regard to land that is rented is important. The tendency of ranchers and others using government property will be to force rentals down, and in other ways take an advantage. Proper vigilance can forestall difficulty here.

There is considerable evidence that the so-called "alkali disease" which is common to certain arid regions of the great plains where vegetation, salt licks, and water contain selenium, is dangerous for livestock raising, for the production of grains for foodstuffs or for livestock feed.[5] The most virulent vegetation produces chronic disease in animals which ultimately causes death—loss of hoofs, horns, and hair are the usual external symptoms.[6] Recommendations have been made for the withdrawal of 50,000 acres of this land from production.[7] Should these and similar areas be purchased the proper use of the land can be studied so that the soil may eventually be employed in a manner that will not be detrimental to health and that will be socially useful.

One thing seems assured. When large tracts are put under government control, assuming a long-time wise administrative policy, their proper use may be studied and practiced. This is certainly desirable both from the standpoint of individual welfare and social good. In fact, it is probable that this constitutes the principal merit of the program. This movement should forestall the intensive use of submarginal lands in times of economic prosperity, and during wet cycles when intensive agriculture is profitable for short periods even in arid regions.

Perhaps another significant aspect of the program lies in the fact that it represents a reversal of a longstanding public policy —that of getting all land into private hands for taxation purposes. If the states and counties in the region could be persuaded to initiate some such program providing for the judicious use of their large holdings of marginal and submarginal land the beneficial effects would be much greater. Perhaps, if the federal projects prove profitable, the states that hold large areas of land will adopt similar measures. At present they are up to the same old game—selling off their acquired domain so that the land they

[5] Knight, Henry G., "The Selenium Problem," address before the Association of Official Agricultural Chemists, Oct. 30, 1934.

[6] Franke, Rice and Johnson, "Report on a Preliminary Field Survey of the so-called 'Alkali Disease of Livestock,'" U. S. Dept. of Ag., Cir. 320, August, 1934.

[7] Knight, *op. cit.*

hold will be placed on their tax rolls again. Only recently the commissioner of immigration in one state issued a bulletin describing the opportunities of his state and a large public landholding organization in another issued a bulletin telling of more than 50,000 acres of state land having been sold during the current year. Much of the land disposed of is admittedly submarginal. States have no other alternative until some satisfactory system has been devised that will assure them an income from lands under state control.

If the Federal Government can succeed in solving the problems it will face in managing its experimental submarginal land projects, the program for the planned use of such lands should be extended to include state and county holdings in the great plains. Whether state and county lands should be taken over by the Federal Government through purchase or lease, whether the government should supervise state policy, or whether it should simply demonstrate and let the states follow its example is problematic. At any rate, if the program can be put on a basis where it is satisfactory, its benefits should be extended to state and county submarginal land holdings.

ACREAGE REDUCTION AND THE DISPLACEMENT OF FARM LABOR[1]

WILSON GEE
UNIVERSITY OF VIRGINIA

The extent to which the program of the Agricultural Adjustment Administration has operated to displace farm labor as a result of the millions of acres of land taken out of cultivation in the so-called "basic" crops is a controversial issue. Sharp national focus was brought to bear on the matter early in 1934 by Norman Thomas, who indicted the cotton and tobacco economy of the South—for which arraignment there is undeniably much valid ground—and at the same time claimed wholesale eviction of share-croppers in Tyronza Township, Poinsett County, Arkansas.

The Memphis Chapter of the League for Industrial Democracy several months ago made a report to Secretary Wallace on the economic and social phases of the cotton adjustment program, in which wholesale eviction of tenants was charged on the properties of several large planters in Cross and Mississippi counties, Arkansas.

As this paper was in process of preparation, a circular letter from the American Civil Liberties Union came to the writer, and the following quotation from it indicates that the agitation concerning the matter still goes forward without abatement, but on a somewhat altered basis of protestation:

> The wholesale eviction of share-croppers in eastern Arkansas solely for membership in the Southern Tenant Farmers Union calls for immediate legal action to prevent not only the spread of this practice by planters elsewhere, but the collapse of the union.
>
> The Civil Liberties Union has been watching the situation for some time and while we deplored the injustices and abuses in the region, the absence of civil liberties issues prevented our taking any active part. Recent developments in the situation, however, have thrown the matter very definitely into our field. Written notices have been served on union members demanding surrender of their holdings. Threats of violence have been made against union members and officials by plantation owners and their agents. Union organizers have been arrested for their activities. . . . The union's chief demands are for collective bargaining, decent wages and conditions, and enforcement of the government contract. Appeals to the AAA at Washington have been without result.

However, when one turns to the Agricultural Adjustment Administration's side of the case, one is reminded of the remark of Mark Twain concerning the premature announcement of his death, to the effect that the report of his demise was grossly

[1] This paper was read before the Section on Rural Sociology of the American Sociological Society, at its annual meeting in Chicago, Illinois, on December 28, 1934.

exaggerated. In the case of the Tyronza Township accusation, a survey of the matter made there by the relief administrator showed that there were 317 more tenants on farms in that county in 1934 than in 1933.

Regarding the complaint of the Memphis Chapter of the League for Industrial Democracy, the properties concerned were investigated very thoroughly by the AAA and the charges were reported to be without foundation.

A considerable number of complaints were received by the AAA which served to indicate that in some cases certain persons were endeavoring to take advantage of others under the 1934-35 cotton reduction contracts. We are told that "these complaints charged that in certain cases large planters or operators were renting land to the government and keeping a smaller number of

SUMMARY OF REPORTS RECEIVED BY ADJUSTMENT COMMITTEE ON INVESTIGATION OF COMPLAINTS RELATING TO LANDLORD-TENANT RELATIONSHIPS UNDER THE COTTON CONTRACT

State	Complaints Investigated	Cases of Unjustified Complaints	Cases Adjusted by County Com.	Cases Adjusted by Field Rep.	Contracts Recommended for Cancellation
Alabama	165	99	35	30	1
Arkansas	547	401	64	71	11
Florida	20	11	1	8	
Georgia	178	131	28	18	1
Louisiana	102	72	21	9	
Mississippi	68	57	7	4	
Missouri	141	95	23	20	3
N. Carolina	95	46	20	28	1
N. Mexico	2	1	1		
Oklahoma	45	22	20	3	
S Carolina	59	28	22	9	
Tennessee	69	47	7	13	2
Texas	601	496	98	2	5
Virginia	6	6			
Total	2098	1512	347	215	24

tenants than heretofore. Others claimed that farm owners had changed the status of tenants in order to secure for themselves a greater share of the benefit payments. Some complaints were to the effect that landlords and operators had inserted certain clauses in the contract or had compelled the tenants to sign supplemental agreements by which they surrendered claim to any portion of the rental or parity payments. Still other letters charged landlords with refusing to recognize tenants as managing share tenants and allow them to sign the contracts."

In order to meet this situation a special group, known as the Adjustment Committee, was set up in the AAA early in May, 1934, for the purpose of investigating complaints relating to violation of the landlord-tenant provision of the cotton and tobacco contracts. In carrying forward the work of this committee, the Agricultural Extension Service in each of the southern states was requested to lend the services of one of the most capable

members of its staff to act as a representative of the AAA for that state in investigating and adjusting complaints relating to landlord-tenant relationships.

Briefly, what these workers found is set forth in the table on page 523, as of December 10, 1934:

Since Arkansas is the state against which the heaviest criticism has been leveled, and in comparison with the number of cotton farmers in the state, had the largest number of complaints, a report on the work of the Adjustment Committee's representatives in that area, as of September 1, 1934, should be of more than usual interest in this connection.

There are approximately 90,000 cotton contracts in Arkansas. As of September 1, 1934, there were only 405 complaints against these landlords which seemed to warrant investigation. Most of these complaints came from certain counties where agitators had been most active in their efforts regarding landlord-tenant relationships.

A report on 277 cases in these 9 counties in the zone of greatest agitation gives the following results:

Complaints investigated	277
Cases of unjustified complaints	201
Cases adjusted by county committee	28
Cases adjusted by field representative	48
Contracts recommended for rejection	8

As a result of the investigations of the complaints of violations of the landlord-tenant problems under the cotton contracts and to a certain extent under the tobacco contracts, the following conclusion was reached by the Adjustment Committee:

> There has been no wholesale displacement of tenants or share-croppers due to the operation of the cotton and other adjustment programs in the South. Charges have been made by various organizations and individuals to the effect that thousands of tenants and share-croppers in the cotton belt had been thrown out of employment as a result of the cotton reduction program, feature stories have been published in newspapers and magazines in which a dark picture was painted of the effect of the reduction program upon this class. In very few cases did field representatives find a net displacement of tenant or share-croppers by cotton contract signers. In practically every case where one had been removed, the landlord had some good reason for doing so and has replaced him with another, and in most instances, a better one.

What conclusions if any may be drawn regarding the situation under discussion? The reply is that while adequate data are not available for a satisfactory answer and that it deserves much further study, there must be some truth in both sides of the controversy. From the materials available for the writer's examination, he must conclude that the AAA has shown less of heat and passion and more of objectivity in its investigation of conditions

than has the opposing side, and that it has proved the situation to have been grossly exaggerated.

Yet, it would seem still to be true that a considerable amount of labor has inevitably been displaced as a result of acreage reduction. Unless farmers are greatly decreasing the hours of their labor, less wheat means fewer people required to harvest and handle it all along the line; fewer bales of cotton require fewer hoe hands, fewer cotton pickers, not so many workers at the gin, fewer buyers, etc. It is believed, in the absence of more specific data, that this displacement has been greatest in the areas where the largest proportions of hired labor, daily, season and annual in character, are normally in use, and in the high tenancy areas, particularly in the cotton and tobacco growing regions. The share-cropper type of tenant, who is virtually a farm laborer largely subject to the command of the landlord, has been the most affected of the tenant classes, the share tenant and the cash tenant having been less involved.

The net effect has been to augment the relief rolls in the areas concerned and to present a very real problem which the Rural Rehabitation section of the FERA is attempting to handle. Of about 5,000,000 families on relief rolls in September, 1934, 1,000,000 were in towns of less than 5,000 inhabitants and the open country. Approximately 500,000, or 10 per cent of the total, were *bona fide* farmers. It is impossible to say from data available what proportion of these have been displaced by the operations of the AAA.

It is important in this connection to note that under the markedly unprofitable conditions that were prevailing in American agriculture before the advent of the AAA large numbers of farm laborers and tenants were being displaced because the farmer was unable to pay them wages or could not wisely, as in the case of the share-croppers of the Southern cotton and tobacco growing regions, run the risk of financing them at ruinously low prices for the resulting products. The contention might very justifiably be made by the AAA that the success attending its efforts to restore agricultural prosperity has operated to continue in the total far more of the farm population on farms than it has caused to be displaced. Moreover, the case is strengthened in this connection when it is recalled that since the business depression of 1929 agriculture has absorbed its own customary surplus of population in much larger measure than before, as well as many unemployed who have returned to it from the cities in recent years.

The crop reduction program was fundamentally predicated upon an accompanying marked recovery of the manufacturing

and mechanical industries, but industrial production is, we are told roughly, only half-way back to the average, and we are still about one-third below the level of industrial output per capita of a decade ago. Industrial unemployment still looms large. Some authorities tell us that at a conservative estimate, due in large measure to technological improvements, we may expect a roll of about 5,000,000 permanently unemployed in this country.

If industry is to stage a complete comeback, there is little cause for permanent concern about the displacement of farm laborers and share-croppers from the farms. Those that are displaced can and will readily be absorbed in the urban industrialized centers. But, what if things do not work out according to formula, and as seems indicated by the foregoing statistics, we have a large burden of permanently unemployed saddled upon us as a heavy tax upon resources for relief? Certainly, under such conditions the displacement of those who know how to make their living from the soil cannot be viewed with equanimity.

The case for controlled agricultural production is a strong one. With the increasing mechanization of farming, a process which cannot and perhaps should not be permanently halted, a limiting of the acreage planted means inevitably fewer people on the, farms, or sufficiently high prices for the more limited volume of production so that the same number of people may with less hours of work live at the same or even higher standards. If such materially higher prices are not forthcoming, and it may be questioned as to whether the urban majority will allow them, the undoubted result will be lower standards of living unless that farm population is decreased by absorption into the industrial.

In fact there would seem to be indicated already such a process at work. The farm population today is at the highest level in actual numbers in the history of the nation. With the industrial machine so severely slowed down, this great number of 32,000,000 souls is being daily augmented through natural increase, and the tendency for this surplus population to move to the cities is checked because there is little opportunity there for them. A continuation of this process over a number of years will present a difficult problem for the AAA. Unless these youths are to remain as vassals on the farms of their parents, agricultural expansion or increased relief rolls will be the outcome. If they remain with their parents, lowered standards of living for the entire agricultural population would seem likely. As for increased relief rolls, the question may be asked as to how much longer we can carry such loads. Of course the intensity of the problem will be miti-

gated or aggravated according to whether foreign agricultural markets regress or are restored and perhaps expanded.

For the present at least, in spite of the displacement of farm laborers and share-croppers, thereby breaking down their morale and placing them upon already overburdened and constantly increasing relief rolls, the experimental efforts of the AAA at controlled production are to be followed keenly and open-mindedly. At the same time its underlying philosophy must be borne in mind, for it is basic to its ultimate success. These times in which its daring and energetic efforts seem to be meeting with success it must be remembered are not normal. While the wheels of industry are not turning at anything like full force, those who in normal times make up the payrolls are being given purchasing power through the instrumentalities of the FERA at the expense of the taxpayer now and more heavily in the future. This relief money is buying agricultural products and helping to a considerable extent to pay the processing taxes that are financing the AAA. So even as matters stand, the theory upon which the AAA is founded is being made to work artificially. The question then is how long will it be before industry will swing back into its full labor absorptive stride, or will it ever again reach such levels? If it does all will be well, displaced tenants and farm laborers will be employed in the recovered industrial development and relief rolls will dwindle.

But what if industry does not come back to its former giant strides in productivity and labor employment, or even if it is very slow about doing so? While everyone devoutly hopes that no such eventuality will arise, it is a contingency which must be seriously recognized and planned for in advance in case it does happen. Undoubtedly, this country cannot continue indefinitely to spend money on relief and social and economic experimentation at the rate it is now spending it. To do so would plunge us into financial disaster that would be more disruptive in its effects than the depression it has sought to cure. As the writer sees it, there is only one course to follow if as a nation we are threatened with any considerable burden of permanent unemployment, and that is to get such unemployed back on the land. Fortunately, we have the land upon which they may be placed. It is true that they would have to be largely upon a subsistence basis, in the beginning at least, and the procedure would have to be rural rehabilitation on an enormous scale financed by both state and federal governments jointly on a long-term basis. But the security back of such financing would be real and not fictitious, and the unemployed

would be put soundly and securely to the task of making their own living instead of receiving it from the public treasury at the expense of a greatly lowered morale.

While the writer is neither a prophet, nor the son of a prophet, it is his personal conviction that the trend in this country is likely to be toward more rather than less people on the farms of the United States. In fact, even with the AAA attempting to move in the opposite direction, this is actually the case today on a large scale. With improved technological processes, a completely recovered industry cannot be expected in the future to absorb all of the labor surplus of the farms and cities of this vast country. There is going to be a considerable mass of permanently unemployed. This fact in itself indicates that the labor factor in production in this country is no longer the dear element that it was at an earlier period in our history. In this respect, we are coming of age, also, in the same way that Europe did before birth was given to our Republic. The place for this permanently unemployed element is on the land, making at least their own living and a sufficient amount above it to amortize the loans for the purchase of their homesteads. Regrettably, too, it will likely contribute its part to the lowering of the standard of living which we all rightly cherish so much. The writer cannot find himself sanguine, either, over the great future for industrial expansion. He may be wrong about it, but much of the most civilized part of the world has been for decades racing madly toward the goal of a maximum industrialization. It is his opinion that it has been more nearly reached than we are aware. The only sound manner in which the urban industrialized structure may be created is upon a sufficiently broad rural base. This means that in a permanently secure national existence the magnificent city must not be built out of proportion to the country which gave it birth and from which it must always derive its very existence, both primary and to a considerable degree secondary.

And thus the effect of acreage reduction upon the employment and mobility of farm labor becomes but an incident in the larger drama now being enacted upon the vast stage of the Nation as a whole. The outcome of the play is not clear at this place in the performance—whether it will be comedy, tragedy, or an old-fashioned morality play, with a revitalizing effect upon a great and expansive country which has now passed violently, but we hope successfully, through the rapidly growing period of youth, filled as it always is with many senseless blunders. The next period is one of sober maturity, with slower, but we hope more substantial achievement.

EFFECT OF AGRICULTURAL PLANNING ON FARM MANAGEMENT IN THE CORN BELT[1]

P. E. JOHNSTON
UNIVERSITY OF ILLINOIS

Farm practices in the corn belt were first influenced by the Agricultural Adjustment Administration at wheat planting time in the fall of 1933. We have therefore had only one crop year in which to study the influence of the various reduction programs on cropping systems, field arrangements, labor costs, power costs, and financial returns. It is evident, since the farm financial records for 1934 have not yet been completed, that most farm management workers have collected but little data up to the present time.

In discussing the effect of agricultural planning on the corn belt, the writer will confine his attention to conditions prevailing in Illinois upon the assumption that they are fairly typical of the corn belt as a whole. An attempt will be made to point out the wide variety of conditions prevailing in even one state notice of which will perhaps serve also to indicate the difficulty of making observations which are typical of any area, even though uniform, large enough to be classed as a general farming-type area, such as the corn belt.

Of the various programs initiated by the Agricultural Adjustment Administration, farm management in the corn belt has to date been influenced only by the wheat and corn-hog programs. Unfortunately, from the point of view of the research worker, it has been simultaneously influenced by one of the worst chinch bug infestations in the history of the country and by a very severe drought. We are therefore confronted with the problem of segregating the effect of the one from the effect of the others.

Financial Returns.—The extent to which benefit payments directly influenced 1934 farm incomes may be indicated by a study of data for a few typical Illinois counties (Table 1). The combined benefit payments which will be collected for the 1934 wheat and corn-hog programs vary from about $43 per 100 tillable acres for all farms in Clay county, to about $279 in Stark county. Clay county is typical of the "redtop" area of southern Illinois, whereas Stark county is typical of the livestock section of the western part of the state.

Actual benefit payments for farms under contract are appre-

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economic Association, Chicago, December 29, 1934.

TABLE 1.—AMOUNT AND RELATIVE IMPORTANCE OF WHEAT AND CORN-HOG BENEFIT PAYMENTS IN SELECTED ILLINOIS COUNTIES, 1934

	Clay County	Monroe County	Champaign County	Stark County	Pike County	McHenry County	State Total
1934 Wheat benefit payments	$ 1,097	$115,371	$ 31,818	$ 769	$ 53,553	$ 3,106	$ 2,402,033
1934 Corn-Hog benefit payments	87,319	114,880	929,481	427,669	758,551	151,665	39,338,269
Number of wheat contracts.	28	902	293	10	316	99	24,289
Number of corn-hog contracts	520	620	3,159	1,002	1,882	504	123,719
Benefit payments per 100 tillable acres (all farms in county and state)[1]	$ 43	$ 158	$ 166	$ 279	$ 249	$ 59	$ 165
Benefit payments per 100 acres of land in farms	$ 36	$ 116	$ 158	$ 246	$ 178	$ 45	$ 136
Land and personal taxes per 100 acres of land in accounting farms, 1933.	$ 54	$ 83	$ 142	$ 151	$ 111	$ 150	$ 121

[1] The total of benefit payments was spread over all farms in the county and not calculated for the cooperating farms only.

ciably higher than indicated above, as in these calculations the payments were spread over all farm land in a given county. This is particularly true in counties having a small percentage of farms under contract. In most counties the payments were more than equal to the total land and personal taxes paid by farmers, and in some counties they were half again as much as the 1933 taxes. Benefit payments therefore have been large enough in most sections of the corn belt to have an important effect on farm incomes. In the most severe drought areas they will constitute a high percentage of the 1934 cash receipts.

Use of Contracted Acres.—The kind of crops planted on contracted acres in 1934 will shed some light on what may be expected for future programs. This is an important factor from the standpoint of feed production, soil conservation, and ultimate effects on crop yields. Records were secured on the use of contracted acres from 810 farm account cooperators scattered in all areas of the state, and from 1,524 corn-hog contracts in five typ-

TABLE 2.—PLANTING OF CONTRACTED ACRES IN COUNTIES COMPARED WITH A STATEWIDE AVERAGE BY ACCOUNT COOPERATORS, 1934

Crops Planted	Clay County	Monroe County	Champaign County	Pike County	Stark County	State Average Acc't Cooperators
	per cent	per cent	per cent	per cent	per cent	per cent
Idle	45.2	31.6	26.8	36.1	39.5	13.1
Alfalfa	—	.2	2.5	4.6	5.5	13.9
Sweet Clover	3.9	54.8	5.7	32.8	3.4	18.2
Other Clovers	1.2	13.0	28.6	9.8	30.8	21.6
Timothy and redtop	36.2	—	.3	.2	.9	3.4
Soybeans and cowpeas	9.9	.2	32.1	11.6	18.4	23.1
Other crops	3.6	.2	4.0	4.9	1.5	6.7
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
Number of farms	430	358	300	200	236	810
Contracted acres per farm (average)	11.1	7.0	19.0	12.7	14.1	19.4

ical counties (Table 2). It is at once apparent, from the contrast of acreage devoted to soil building crops, on the one hand, and that left idle on the other, that the farm account cooperators made better use of the contracted acres than did the average of all farmers. The account cooperators left 13 per cent of the contracted acres idle, put 14 per cent in alfalfa, 40 per cent in clovers and 23 per cent in soybeans and cowpeas. The data from the five typical counties for all corn-hog cooperators, in comparison, show that the per cent of idle land ranged from 26 to 45, while the percentage devoted to alfalfa was no higher than 5.5 per cent in any county studied. The percentage of contracted acres devoted to alfalfa and sweet clover is very important in determining the ultimate effects of an adjustment program, because both alfalfa and sweet clover increase grain crop yields much faster than other legumes. Records from account cooperators in central Illinois indicate that corn following sweet clover pasture produces 11.5[2] bushels per acre more than corn following oats, whereas corn following red clover pasture shows an average of 8.7 bushels increase over corn following oats. In practice, the acreage that can be devoted to sweet clover and alfalfa is often limited by acid soil conditions which can be corrected only by application of limestone. In this connection, data from Monroe county where a large amount of limestone has been applied are very interesting in showing 55 per cent of contracted acreage planted to sweet clover. Applications of limestone have been seriously curtailed during these years of very low farm incomes, and it is to be expected that some benefit payments may in the future be used for this type of soil improvement.

The value of legumes as compared with idle crop-land on contracted acres was clearly demonstrated at the time the dought became severe and the restrictions on the use of contracted acres were removed. Farmers who had left their land in clovers seeded the previous year were in a position to use them for hay or pasture, and those who seeded new legumes alone were able in many cases to get considerable fall feed. Soybeans planted for soil improvement were used extensively for hay. One farmer expressed his idea in these words: "I had 16 acres of good clover instead of 16 acres of worthless corn and a lot of expense." As a result of the drought and chinch bug damage the contracted acres on many farms in 1934 produced more feed than any other similar area on the farm.

[2] H. C. M. Case and M. L. Mosher, "Farm Practices that Pay." Illinois Cir. 389.

Restrictions on Cropping Systems.—The 1934 corn-hog program demonstrated very conclusively the inadvisability of placing too many restrictions on cropping systems. Under the corn-hog contract an attempt was made to control the acreage of corn, wheat, feed crops, and total crop acres. Needless to say, many farmers found it impossible to work out a crop schedule for 1934 which would permit them to plant all of their land to crops ordinarily grown in the area. After they had planted all the corn, oats, barley, wheat, and hay permitted under the rules, and had set aside the necessary contracted acres, they still had tillable land which could be used only for such crops as watermelons, buckwheat, flax and other unusual or unprofitable crops. In order to correct this situation, a ruling was released March 15, 1934 permitting the acreage of soybeans, cowpeas, field peas, and other annual legumes to be increased without respect to the amount grown during the base period. This change was responsible in part at least for a 50 per cent increase in the 1934 soybean acreage in Illinois over that of 1933.

Labor and Power Costs.—Since the 1934 farm account books have not yet been analyzed, no definite data are available concerning the influence of the adjustment programs on labor, power, and machinery costs. It is very apparent however that, on the average, fields were smaller in size because portions of many large fields were set aside for contracted acres. Rotations of long standing were interrupted on many farms in an effort to comply with the restrictions of the adjustment contracts. The increase in soybean acreage was so great on some farms as to seriously interfere with normal labor distribution as evidenced by the fact that there were late harvested fields in spite of a very favorable fall for such work. On many farms where most, or all, of the work is done by members of the farm family there has been an increase in the labor cost per unit of product arising from the fact that the same labor which was used in full capacity production was still available for the reduced production.

Utilization of Tillable Land in Relation to Control of Livestock Production.—The farmers of Illinois have expressed a desire for a simplified and unified contract because many of them believe that through regulating the supply of feeds, particularly grains, the supply of livestock can be effectively controlled. It has, in fact, been suggested from several sources that a desirable type of contract for 1936 would be a unified contract (without contracted acreage) providing for a reduction of the percentage of plow land in grain crops and an increase of acreage in hay and

pasture crops. Farm account records from central Illinois contain some interesting facts as to what has happened in the past when farmers have made changes of this kind—facts which do not support very well the unrestricted use of the increased acreage in hay and pasture.

Central Illinois farm records, kept for a continuous three-year period,[3] were analyzed to discover the relationship existing between percentages of pasture and hay acreages and the total amount of feed produced. For this study the roughland farms were eliminated in order to make the remaining records more nearly comparable. These prairie land farms were grouped according to percentages of tillable land in hay and pasture, using a three year average as the basis for the percentages. The data were then tabulated for the year 1931, as this year was the only one common to all records.

Variations in Amount of Hay and Pasture on Tillable Land.—The 460 farms were found to vary widely in the percentage of tillable land devoted to hay and pasture, as there were 51 farms in the group which ranged from 0 to 9.9 per cent and 49 farms in the group having over 30 per cent of tillable land in hay and pasture (Table 3). The farms are distributed over 12 contiguous central Illinois counties, the eastern half of the area being in the

TABLE 3.—1931 DATA FOR 460 CENTRAL ILLINOIS ACCOUNTING FARMS, GROUPED ON A BASIS OF PERCENTAGES OF TILLABLE LAND IN HAY AND PASTURE OVER A THREE-YEAR PERIOD[1]

	Per cent of Tillable Land in Hay and Pasture					
	0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30.0 and Over
Number of farms	51	90	113	94	63	49
Acres per farm (1931)	278.6	259.4	258.0	226.3	225.0	200.4
Per cent of tillable land in hay and pasture 3yr. average	5.7%	13.1%	18.0%	22.0%	26.2%	37.2%
Per cent of tillable land in legumes—1931[2]	9.4%	12.3%	17.7%	18.8%	22.5%	24.6%
Per cent of land area tillable—1931	89.5%	91.0%	91.3%	92.5%	87.5%	86.4%
Value of feed fed per 100 acres to productive livestock—1931	$419	$546	$721	$793	$1,027	$1,351
Value of man labor input per 100 tillable acres—1931	$428	$459	$507	$504	$586	$604

[1] Averages are for 1931 although the records were grouped on the basis of the average percentage of tillable land in hay and pasture for a three-year period.
[2] Includes soybeans and other legumes harvested for seed.

grain-surplus part of the state, while the western part extends into the heavy livestock feeding section. Farms in the various groups are not uniformly distributed over the area studied as a relatively larger number of the farms with small percentages of

[3] The farm account records used in this study were collected through the Farm Bureau-Farm Management Service under the supervision of M. L. Mosher. This is a cooperative project between the Department of Agricultural Economics, University of Illinois and the County Farm Bureaus in which the cooperating farms pay a fee for the service which they receive.

hay and pasture were found in the eastern half of the area, while more of the farms with a high percentage of land in hay and pasture were located in the western part.

The lack of uniformity in geographical distribution of the farms in the various groups is indicated by one measure of the quality of the land. The percentage of land area tillable was lower for the two groups having the highest percentage of land in hay and pasture than for the other four groups. This indicates that the quality of the land on those farms having the most tillable land in hay and pasture was not quite on a par with the quality of the land in the other four groups. A higher percentage of farm land in the livestock section (the western part) of the area studied is untillable than in the grain-surplus area (the eastern part). In this connection it must be remembered that only farms with a high percentage of tillable land and a high land value were included in the study.

The wide variation in the percentage of tillable land in hay and pasture on farms in the heart of the corn belt brings to attention a very important point in connection with adjustment programs. Some farmers, it is evident, even before the adoption of adjustment programs, planted a high percentage of their tillable land in hay and pasture crops, as 24.3 per cent of the farms studied had over 25 per cent of their tillable land in such crops. The adjustment programs to date have required the same adjustments of all farmers irrespective of the amount of adjusting they had done prior to the base period. It is obviously unfair and unwise to ask a farmer on an all-tillable farm to increase his acreage in hay and pasture when he is already devoting over 25 per cent to such use.

Relationship Between the Amount of Livestock and the Percentage of Tillable Land in Hay and Pasture.—It is likewise evident from these farm records that the amount of livestock increased very rapidly as the percentage of land in hay and pasture was increased. The most logical assumption is that these farmers increased the hay and pasture acreage in order to produce more livestock. The concentration of livestock has been measured by the value of feed fed per 100 acres[4] to productive livestock, which measure indicates that there was about three times as much livestock on the farms having the most hay and pasture as on those farms having the least (Table 3). The man-labor input was also materially increased as the amount of livestock increased in spite

[4] Here expressed as value of feed fed per 100 total acres in the farm. In other parts of the paper the concentration of livestock is expressed in terms of the value of feed fed per 100 tillable acres.

of the fact that there were fewer acres devoted to grain crops and more to hay and pasture.

All classes of livestock were increased as the percentage of tillable land in hay and pasture was increased, but beef cattle were increased more than other classes. Five times as much feed was fed to beef cattle per 100 tillable acres on the farms with the

TABLE 4.—VALUE OF FEED FED PER 100 TILLABLE ACRES TO VARIOUS CLASSES OF LIVESTOCK, CENTRAL ILLINOIS ACCOUNTING FARMS, 1931

Kind of Livestock	Per cent of Tillable Land in Hay and Pasture					
	0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30.0 and Over
Hogs	$248	$322	$404	$392	$569	$669
Beef cattle	102	145	210	265	361	502
Dairy cattle	76	88	112	121	154	285
Sheep	10	6	23	29	37	29
Poultry	33	38	41	50	52	80
Horses	81	92	108	111	130	119
TOTAL	550	691	898	968	1,303	1,684

most hay and pasture as on the farms with the least, as compared with almost four times as much for dairy cattle and about two and one-half times as much for hogs (Table 4). For the average of all farms however, hogs consumed almost 45 per cent of the total feed fed. Although there were increases in the value of feed fed to sheep, poultry and horses, these classes of livestock consumed collectively less than 20 per cent of all feed consumed for the average of all groups. Beef cattle, dairy cattle and sheep together consumed 34 per cent of all feed fed on the farms having the least hay and pasture as compared with 48 per cent on the farms having the most hay and pasture.

Decrease in Grain Crops.—On the other hand, there was a de-

TABLE 5.—PER CENT OF TILLABLE LAND IN GRAINS, HAY AND PASTURE CROPS FOR ACCOUNTING FARMS IN CENTRAL ILLINOIS, 1931, AND FOR ALL FARMS IN THE SAME AREA, 1929

Crops Grown	Per cent of Tillable Land in Hay and Pasture						Average of all farms in area[1]
	0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30.0 and over	
	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Corn	57.9	53.6	48.2	46.2	46.3	41.0	44.0
Oats	21.5	23.5	18.4	20.5	18.3	16.0	25.0
Wheat	6.7	5.0	7.4	5.5	4.4	1.7	5.3
Barley	4.2	2.4	3.3	3.1	3.5	3.1	1.7
Soybeans	3.8	2.0	3.1	1.9	.8	.2	
TOTAL GRAINS	94.1	86.5	80.4	77.2	73.3	62.0	76.0
Timothy	1.0	2.6	3.3	4.8	4.3	10.2	
Clovers	.2	1.9	2.6	3.2	3.7	3.2	
Alfalfa	1.6	1.8	2.7	3.2	4.1	6.9	
Mixed (part clover)	1.2	3.6	4.5	5.4	8.0	9.1	
Soybeans	1.1	1.3	1.5	1.1	1.5	2.9	
Grain hay	.6	1.9	3.4	4.3	4.6	4.9	
TOTAL HAY AND PASTURE	5.7	13.1	18.0	22.0	26.2	37.2	19.8
Other crops	.2	.4	1.6	.8	.5	.8	4.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Data from 1930 census for all counties in which accounting farms were located.

crease in all grain crops as the percentage of tillable land in hay and pasture was increased. The percentage of land in corn dropped from 57.9 to 41.0 and the percentage in oats dropped from 21.5 to 16.0 (Table 5). All classes of hay and pasture crops showed fairly uniform increase with timothy and mixed grasses and clovers making up almost half of the total hay and pasture. The percentage of tillable land in legumes varied from 9.4 per cent on the farms with least hay and pasture to 24.6 per cent on the farms with most hay and pasture (Table 3). An average for all farms in the 12 counties, as reported by the 1930 census, indicates that 76.0 per cent of the tillable land was devoted to grain crops and 19.8 per cent to hay and pasture crops.

Crop Yields.—A rough idea of the combined influence of legumes and livestock on crop yields may be secured from a comparison of grain yields on the six groups of farms included in this study (Table 6). The full influence of these two factors on crop

TABLE 6.—VARIATION IN CROP YIELDS ON CENTRAL ILLINOIS ACCOUNTING FARMS WHEN GROUPED ON THE BASIS OF PERCENTAGE OF TILLABLE LAND IN HAY AND PASTURE, 1931

Kind of Crops	Per cent of Tillable Land in Hay and Pasture					
	0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30 and over
	bushels	bushels	bushels	bushels	bushels	bushels
Corn	46.6	47.9	47.6	48.3	50.2	47.5
Oats	46.0	46.0	48.1	49.7	47.9	46.5
Wheat	24.6	28.6	25.9	26.0	27.2	27.1
Barley	30.8	36.8	35.2	37.1	35.4	33.3
Soybeans	25.2	23.3	21,8	25.3	28.7	24.5
CROP YIELD INDEX	97.0	99.6	99.1	102.2	103.5	98.5

yields is not indicated by these data since, as was previously shown, the average quality of land is poorer for the two groups with most hay and pasture than for the other four groups. In spite of this handicap the crop yield index was highest for the group with 25.0 to 29.9 per cent of tillable land in hay and pasture, and the index was higher for the farms with over 30 per cent than for the group with the smallest percentage in hay and pasture. Thus, the influence of legumes and livestock on crop yields was even greater than is apparent at first glance.

Total Digestible Nutrients.—The intensity of production for the various groups of farms is indicated by a comparison of the total amount of digestible nutrients produced on each 100 acres of tillable land (Table 7). These data are based upon the assumption that an acre of tillable pasture gave the same yield as an acre of the same kind of hay. Thus the yield of red clover pasture was considered to be the same as of red clover hay. The total poundage of each kind of feed was converted into poundage of digestible

TABLE 7.—TOTAL DIGESTIBLE NUTRIENTS PER 100 TILLABLE ACRES IN THE FORM OF GRAIN AND ROUGHAGE ON CENTRAL ILLINOIS ACCOUNTING FARMS, 1931

	Per Cent of Tillable Land in Hay and Pasture					
	0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30.0 and over
	pounds	pounds	pounds	pounds	pounds	pounds
Grain	160,466	154,124	141,647	138,669	137,694	113,483
Hay and pasture	11,937	18,559	30,221	40,727	40,325	59,351
TOTAL	172,403	172,683	171,868	179,396	178,019	172,834

nutrients by multiplying total poundage by the per cent of digestible[5] nutrients for that particular feed. These calculations do not include the feed value of corn stalks or straw from small grains. It is very evident that the total pounds of digestible nutrients per 100 tillable acres was increased by increasing the percentage of land in hay and pasture. The digestible nutrients in grain crops decreased as the percentage of hay and pasture increased, but this decrease was more than offset by the increase of digestible nutrients in roughage. The increase in total nutrients was due to the fact that crop yields were higher on the farms with more hay and pasture and to the fact that alfalfa and sweet clover produced more total digestible nutrients than small grain crops.

Here, then, are two important factors; grain yields and total digestible nutrients increased as the percentage of hay and pasture increased on tillable land—a fact which should be taken into consideration in planning any long-time production control program.

Conclusions

1. Over half of the contracted acres in typical Illinois counties were devoted to legumes, thus indicating the farmers' desire to use the adjustment programs for soil improvement purposes.

2. Too many restrictions on cropping systems will reduce the number of cooperators in an adjustment program and will work a hardship on many other farmers who do cooperate.

3. The contracted acres and cropping restrictions made patchwork of many farms in 1934, and therefore added to operating costs.

4. It is poor farm management to ask all farms to make the same adjustment from a base period when some have already made a similar or even larger adjustment, and when an additional change may result in a decided decrease in farm incomes.

5. Benefit payments for 1934 were more than sufficient to pay

[5] Percentage of various feeds that are digestible: corn—81.7, oats—70.4, barley—79.4, wheat—79.8, soybeans—94.1, timothy—48.5, red clover—50.9, alfalfa—51.6, soybean hay—53.6, mixed hay—50.0.
Henry, W. A., and Morrison, F. B., Feeds and Feeding, page 728, 18th edition.

all 1933 farm taxes and comprised for the state as a whole more than 10 per cent of the 1933 gross farm income.

6. An increase in the amount of tillable land in hay and pasture was found to be associated with an increase in the amount of livestock.

7. Beef cattle and dairy cattle were increased faster than other classes of livestock as the acreage of hay and pasture crops was increased.

8. An increase in hay and pasture was accompanied by an increase in labor input because of the associated increase in livestock.

9. Grain crop yields were increased as the percentage of tillable land in hay and pasture was increased.

10. More total digestible nutrients were produced per 100 tillable acres on farms with a high percentage than on farms with a small percentage of tillable land in hay and pasture.

11. An adjustment program which causes an increase in the percentage of tillable land in hay and pasture and a decrease in grain crops may be called a conservation program but not a reduction program, if continued over a period of years. It will be both a conservation program and a reduction program *if the additional land devoted to grass and legume crops is not permitted to be harvested by livestock.*

It is logical to assume that a program which makes it profitable for farmers to increase the amount of hay and pasture crops will result in an increase of beef cattle, dairy cattle and sheep if there are no restrictions placed on the use of such crops.

AGRICULTURAL PLANNING AND FARM MANAGEMENT IN THE COTTON BELT[1]

R. J. SAVILLE
LOUISIANA STATE UNIVERSITY

This topic, indeed a timely one, arouses endless questions about the future of farm management. The broad outlines of agricultural planning are little different for the cotton belt than for other areas. The theories and practical applications deserve a more thorough analysis and verification than that usually presented. Marked variance may be noted between official and unofficial opinion of those closely allied with the present movement. Perhaps it will be adequate in this paper to present briefly some important phases of the planned programs as they are being interpreted by and for farmers in the cotton belt. Particularly should active leaders, such as are assembled here, be interested in the problems from the standpoint of that group of farmers who are now self-sufficing or better in their managerial ability, as well as their less fortunate, but apparently more deserving neighbors.

Planning implies guiding economic and social forces in such a manner that adjustments may be facilitated in the dynamic changes inevitable in normal growth. The success of planning will depend in no small measure upon how well those intrusted with the tasks foresee the results to be obtained from the application of given plans. It is highly important then that assumptions properly define causes of maladjustments. A complex problem hastily and wrongly interpreted may lead to comprehensive planning, concerted propaganda, and excessive spending in seeking to correct results without removing the causes. In recent years the cotton belt has experienced some outstanding examples of such planning. Our present leaders tell us that economic and social friction is greater now than before. The future workability of a program, rather than present popular approval, should determine its content.

The final test of plans for immediate agricultural recovery and for the transition to a permanent program must not be confined entirely to farmers, but must embrace the entire population comprising the cotton belt. On this issue most discussions of the farm management problems are surprisingly inadequate. Too little consideration has been given to external forces that have a direct

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economic Association, Chicago, December 29, 1934.

influence upon the internal relationships. The interest of the individual cotton farmer is being coordinated now with the interest of all cotton growers. Our next step should be to coordinate the interest of present and prospective world producers of cotton. Finally the horizon must widen to include all individuals having economic and social contacts with cotton growers.

The problems of the cotton belt may be divided into two groups from the standpoint of contributing causes, and in developing corrective plans. In one group are the changing price level disturbances such as unemployment, indebtedness and tax burdens, unfavorable distribution costs, and inadequately balanced agricultural and industrial production. In the other group are those problems that have developed largely independent of price level changes such as land utilization, providing public services for rural areas, system of taxation, exploitation of resources, and finally, management for a large group of the population that maintains little or no reserve against the uncertainties of income.

Rural unemployment, apart from the relief activities, has never been a serious problem in agriculture compared with other occupations, nor have recovery measures made any marked effect in the cotton belt upon the demand for farm labor. Adjusting the price level through dollar devaluation, together with refinancing farm indebtedness at lower rates of interest and debt adjustments appear as the most important accomplishments thus far in starting a recovery and in bringing permanent improvement directly to farmers without introducing numerous disorders. Little attack has been made on distribution costs in order to safeguard producers and consumers in the future. Unbalanced production, particularly the surplus problem, has received greater attention and acclaim than all other recovery efforts. While offering very favorable temporary benefits, it has yet to remove many weaknesses in developing the permanent program.

An inventory of such fairly permanent changes as the loss of soil fertility through erosion and poorly balanced farming, forest depletion without provisions for replacement and for water storage, settlement of comparatively unfertile lands, and public improvement expansion into areas without reasonable ability to pay, shows the inadequacy of our permanent program. Vast human and material resources have been exploited and wasted through the lack of adequate foresight in planning for their protection. Few favor continuing such conditions. Our present goal of normality is represented by prices and employment such as

existed during the middle twenties. In the cotton belt we are presumptuous to think that such a goal is at all possible in the future. Some of our agricultural lands are beyond restoration in soil fertility. The excellent contribution of our forest resources to economic balance for two decades can be counted on for only a fractional part within the span of the present generation. Neither the raw materials nor potential construction demands are present. Those whose occupation during our so-called prosperous past came from this source must now find other employment. Also, business enterprises that developed in connection with forestry and furnished potential markets for agricultural products have disappeared along with the depletion of forest resources.

The marked success of the past two years lies largely in the proper timing in the introduction of numerous plans. Dollar devaluation and definite steps for curtailing cotton production were set in operation within three months. During the first three years of the drastic cotton price decline, farmers reduced the cotton acreage 7.3 million acres. In this period government planning, while educationally for acreage reduction, was financially for acreage expansion as evidenced by activities in price stabilization and emergency crop production loans. During the past two years under governmental control acreage was reduced 12.9 million acres.

Already we are experiencing some doubt about the advisability of continuing the cotton program, even with its tremendously popular support among farmers. The trend is toward a planned farm organization that will take into consideration uses for all resources rather than for cotton or other basic commodities alone. It is the endeavor to shift from the emergency to a permanent program as benefit payments are reduced. While more complicated and incidentally more desirable, it appears at this time impossible to administer. Benefit payments should soon become contingent upon carrying out a minimum of organization requirements for fairly permanent conditions.

While placing cotton control in operation at the same time as dollar devalution was timely for obtaining popular support, it has created widespread confusion about causes of price changes. Farmers and agricultural leaders have been well drilled in the results of acreage and production control, much of which was biased opinion, enthusiastically and convincingly presented. The writer is of the opinion that few people in the cotton belt, whether cotton farmers or not, could give any plausible explanation as to

why the 1933 cotton crop, which was slightly larger than the crop of 1932, sold at a 40 per cent higher farm price per pound. In our haste for action much has gone unexplained.

A résumé of farm management studies of the cotton area shows that practically all of them demonstrate by standard or actual organization, or low unit cost relationships, how individual farm operators might enhance their net earnings. Almost without exception these studies carried recommendations for increased intensity of culture on the individual farm, a sharp contrast to our present planning. The general scheme has been to assume more flexible rates and volumes of production than for comparative prices. Price analysis and price changes received little consideration in connection with the suggested changes in production. Any organization shifts from the comparatively oversupplied and low priced products to the undersupplied and high priced increased the net earnings. A similar procedure is being considered for planning permanent adjustments based on the entire farm unit instead of basic commodities. Just what happened to organizations so inflexible that they could not be or were not changed and had lower prices due to increased competition was ignored. Their net earnings were lower. For certain commodities, particularly cotton, we have reason to believe the price behavior has been such as to cause greater loss to those not changing than were the gains to those changing.

Another approach to the problem has been through studies delineating type- and system-of-farming areas, developed into their present status through selective advantages. Within these broader areas recommendations for the kinds and magnitudes of enterprises for maximum net earnings could be made.

In all of these studies an undue amount of weight was usually given to manipulating technical conditions. Most price assumptions were unattainable. The human element was largely ignored and many human characteristics that were very important in determining existing and probable future organizations passed unnoticed.

However satisfactory or unsatisfactory past planning has been, the surprising thing seems to be that it forms the chief basis upon which plans for future development are being made. Under the basic commodities control program the condition developed with faulty planning is accepted almost entirely as the basis for future development.

Certain basic business principles of operation have been pointed out in many studies for individual success under all price

conditions. Agricultural planning old and new does not seem to change these principles. Managerial capacity and efficiency vary and are so rewarded. Present cotton production control is placing a greater premium on superiority than was formerly enjoyed under keener competitive conditions, a monopolistic system for agriculture that bids fair of working. Those whose economic productivity in agriculture may not be adequate for the desired living standards must be taken care of. The type of this alternative employment still confronts us.

The farm management problems remain because farmers will continue to seek their best interests. While the road may be temporarily blocked in one direction there are always attractive outlets for those with initiative and foresight. Greater economy in production will be stressed. Net earnings may be increased by lowering cost. Opportunities for improving the size of business unit through the acquisition of more property are not being overlooked. The reduction of overhead costs is underway. Large operators will gradually eliminate some of their tenants and work stock in seeking higher efficiency and greater net earnings.

Those advantages that are obtained by farmers in the earlier stages of rising prices appear to be disappearing rapidly in the case of the cotton farmer, particularly small operators. Sentiment for control has been strong and, in the writer's opinion, will remain so in the future, but for somewhat different reasons. Already farmers are anxious about the excessive rise in retail prices of their important purchases such as feeds, meat, flour, and cotton clothing. The price adjustment is not complete.

Cotton belt farmers have begun to wonder about how much they are helping to pay some other farmers to not grow the very things they want and need most; also, whether their cotton market is disappearing more rapidly of late than the burdensome surplus. While it is easy for farmers to vision the surplus reducing activities, yet there remains that doubt about being able to obtain adequate feed for livestock, food and clothing for their families.

Tentative decisions at this early stage of the adjustment must be made from data of comparatively short duration. Many economic and social changes take place slowly, so that their complete effects may not be fully realized for months or years afterward. Examples may be taken from farm wages in ten cotton growing states and from cotton consumption and exports.

The increase in farm wages during 1933 compared with 1932, was more rapid than the rise in the index of prices paid by farm-

ers for commodities used in living and consumption. During 1934 the comparative position was decidedly less favorable in January than in October, 1933, but improved for April and July. The October indices show no advantage in purchasing power for monthly wages and only 65 per cent of their previous advantage for day wages. The correction that was taking place between the supply of and demand for farm labor during 1933 and the first half of 1934 was less favorable in October than in July, due largely to conditions in the west south central states where demand for labor has changed only little since 1932. If competition from relief agencies is reduced, as appears certain at present, the farm wage earner will not be in position to fare as well as formerly.

The problem of cotton exports is more vital to cotton farmers. For the year 1933-34 our effort in reducing the world supply of cotton was only 65 per cent effective. Exports of American cotton to November 9 are only 62.8 per cent of the previous 4-year average for the same period. American cotton consumption is reported at 85.0 per cent of the previous 5-year average for the first three months beginning August 1.[2] There is nothing positive and assuring to cotton growers in these trends. Are farmers correct in expecting unit distributing charges to increase and more unemployment to result from this decreased volume of business to be handled? Will present benefits to farmers lead to further demands for reduction if the parity price cannot be reached? The problem is far more complex than that simple mathematical analysis showing how a large domestic cotton crop is less favorable than a small crop. Producing small cotton crops occasionally when business is equipped to handle a large volume is not at all synonymous with producing a small crop every year, with associated businesses adjusted accordingly.

Many farmers in the cotton belt do not produce basic commodities. Production control for them seems unescapable because costs are rising rapidly while prices for their products were little higher for some products in 1934 than in 1933. Truck crop and strawberry growers in Louisiana have been hard pressed. Purchases of feed and food are from controlled products, such as cottonseed meal, flour, chops, and rice. Increased competition for them has been made partly possible by acreage increases in the cotton area, cotton farmers turning to these more intensive crops. Farm organization in the cotton belt and in truck growing areas of the South adjusts easily to more intensive methods. It is most difficult to adjust toward more extensive methods. Diversification

[2] United States Department of Agriculture, Crops and Markets, Vol. 11, No. 11.

of lines of production in a surplus producing area such as the cotton belt is always questionable.

Balancing upland cotton farm organization with livestock and dairying usually increases net earnings. Where livestock and dairying form important commercial sidelines much of the feed supply must be purchased. Cottonseed meal and hulls and wheat by-products make up most of the feed purchases for Louisiana dairymen. The cotton and dairy system for upland cotton in North Louisiana was the most profitable during the depression years both from the money income and soil improvement standpoint. Slowly advancing milk prices tended to be more than offset by rising feed costs thereby reducing labor earnings from dairying during the latter half of 1933 and first half of 1934. Those best adjusted to the price changes will survive and benefit by higher milk prices and reduced competition.

The program for rural relief is a shifting one and still constitutes a serious problem to farmers above the acceptable level. An increase in agricultural incomes in the cotton belt should ordinarily lead to increased employment and reduced need for public relief. Several planned programs are developed along diametrical lines. In one instance a premium is placed on not having anything, while the other attempts to make the individual at least self-sufficing. The rapid drop in the farm labor demand-supply ratio is due largely to removal of supply rather than increased demand.

Future possibilities of increased competition and further restricted markets due to subsistence farming, part-time farming and kindred schemes involving subsidy from general taxation, offer doubtful improvement of a permanent nature. Does this mean an influx of individuals who are even less prepared for farming and farm life than those already on the land whose plight we are seeking to improve?

Shifting from an emergency program planned in great haste to a long-time permanent program appears more difficult as time goes on. Should control be withdrawn entirely, unprecendented expansion would result. Unless taxes and debts are changed further the results might be even more disastrous than at the beginning of 1933. However, no farmer will want to be caught with a small base acreage as some were in 1933. Anticipating the future at this time involves more uncertainty than ever before. Apparently those individuals who tried to do most to reduce the burdensome cotton surplus by acreage reduction benefited least by so doing and the man who expanded acreage during the same period has benefited most in the emergency program.

Are these plans leading to a greater diffusion of economic security for cotton growers? After learning the lesson of the burdensomeness of debts and taxes, we are failing to take the necessary steps to make their recipients just as uncertain in their security as those who pay them. Neither do we seem to have learned that indebtedness should be repaid during rising prices rather than expanded. The income of the bond holder should be no more rigid than the income of the mortgaged property, and taxes should be as flexible as the income of the tax payer. The more flexible the distributive system is builded the greater hope there is for economic security.

Finally, in considering all of the correctives that have been attempted thus far in our agricultural planning, one wonders just where we are molding for permenent improvement. A brief survey of a number of leading economists and rural sociologists at experiment stations in the cotton belt indicated quite varied opinions as to achievements so far and trends ahead. One issue on which there seemed to be concurrent opinion was the effect of dollar devaluation on cotton prices and subsequent effects in creating the rapid recovery enjoyed temporarily in the South. Another point of fairly wide concurrence was the increased tendency to return people to the poorer agricultural areas. On other questions dealing with the transition to more permanent phases much doubtfulness prevails.

AGRICULTURAL PLANNING AND FARM MANAGEMENT IN THE WHEAT BELT[1]

W. E. GRIMES
KANSAS STATE COLLEGE

Agricultural planning in the wheat belt probably is little, if any, different from agricultural planning for any other section of the country. The production of the major farm products of the region must be coordinated with the markets available for the products. The plans must be such that they will be voluntarily and generally accepted. Furthermore they must agree with the known facts concerning both the supply of and the demand for the products. Perhaps the best that can be done in the limited time available for this paper is to indicate the basic assumptions, the underlying facts, and the most desirable procedure which, in the opinion of the writer, must be taken into account in making plans for the future of the agriculture of the wheat belt.

The wheat belt of the United States is a somewhat vaguely defined region but for the purposes of this paper it is considered to include those regions where hard winter and hard spring wheat are generally grown. This includes portions of the states of Texas, Oklahoma, Kansas, Colorado, Nebraska, North and South Dakota, and Montana. Perhaps portions of other states should be included and if others wish to include them the writer has no objection.

The region described above lies on both sides of the 100th meridian north and south through the United States. In this region climatic conditions are variable from year to year and the yield of the wheat crop fluctuates with these variations in climatic conditions. It is not a region which can be expected to produce a fairly uniform quantity of wheat year after year. Total yields for the region have varied from the record crop of 1931 to the near failure of 1934 and other years. It is to be expected that similar fluctuations in yields will occur in the future.

The wheat belt includes much land that only recently has been brought under cultivation. In these newer regions, weeds, insect pests and plant diseases have not as yet developed to harass the wheat grower to the extent that these pests do in regions that have been in cultivation for many years. One can only guess the extent to which these pests will be a factor in the future but past

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economic Association, Chicago, December 29, 1934. Contribution No. 91, Department of Agricultural Economics, Kansas State College.

experience indicates clearly that their importance will increase as the region grows older.

The above are facts which must be considered in any long time planning for the region. There probably are many other similar facts which must be taken into account as plans are developed and put into operation.

In addition to the basic facts concerning the region there are other facts and assumptions which must be taken into account. These will be enumerated briefly.

1. The basic concept of the goal to be reached through planning must be set forth. In terms of human beings is the goal to be the greatest welfare for those producing the product or is it to be the welfare of the consumers of the product? These two viewpoints may be diametrically opposed. The producer of wheat is interested in conditions which will make it possible for him and his family to enjoy a high standard of living. In the interest of those who continue to produce, wheat production should be so limited that prices of wheat will average high. On the other hand, consumers of wheat are interested in securing wheat at the lowest possible cost consistent with a continuous supply. It is probable that the latter condition will prevail if free and unlimited competition in the production of wheat is permitted. The restriction of competition occurs when laws, rules, and regulations are adopted affecting the conditions of production. These impediments to free competition are legion. The important consideration is their general trend. This trend for the long time is, as yet, none too clearly defined although recent events indicate that it will be toward restricted competition.

2. The probable demand for wheat for domestic consumption will materially affect the plans for the wheat belt. It is generally known, although sometimes resented, that the consumption of wheat and wheat products declines as the incomes of people increase. If and when more prosperous times return, will they result in a reduced quantity of wheat needed to supply the domestic demand? If so, how much will the quantity demanded be reduced?

3. Taxation has an important bearing on the problem of planning the agriculture of the wheat belt. If in the future, greater reliance is placed on indirect taxation, regions now in difficulty may find it much easier to continue to compete in wheat production. This problem has many angles and involves the relative responsibilities of local, county, state, and national governments

for the conduct of services within local communities as well as in the larger political units. In many parts of the wheat belt and elsewhere the spheres of these respective governmental units are not so well defined as is desirable to permit long time planning.

4. Transportation facilities and costs enter into the problem. A change in the relative freight rates from a particular region will affect the price of wheat to growers in that region. Highway developments and the division of responsibility for them is important. The shift in recent years has been to place more of the responsibility for highway construction and maintenance on state and federal governments and less on the local community. This trend, if continued, will aid those far from market since the improved highways tend to overcome the handicap of distance.

5. International trade is of vital importance to the wheat belt. If world markets are to be restored the production of wheat in the United States can be greater than if only the domestic market is available. The solution of this problem will require years and is contingent upon the attitudes of the American people and of the peoples of other nations toward international relations. The United States lacks a definite policy on foreign relations.

6. A sixth factor to be taken into account is the existing situation in wheat production in the United States. It may be asserted that those regions producing the types of wheat which have accumulated in greatest abundance as surpluses should reduce their production in proportion to the apparent surplus. It is questionable whether this is sound reasoning. The existing surpluses have piled up where storage was available and consist of the wheat which could be diverted into storage most easily. The different classes of wheat are interchangeable in their use to some degree. This situation needs careful analysis before conclusions are reached. The location of these surplus supplies and the kind of wheat in these supplies is in part at least, the result of geographical location of the source of the supplies and economic expediency in handling the excess wheat produced. Hard winter wheat is produced nearest the large terminal elevators. It has been most convenient to store this wheat. Also, hard winter wheat moves to market with a rush following harvest. Market receipts exceed mill needs at that time and this wheat logically goes into storage. Wheat from other regions reaches market over a longer period of time and more of the current receipts can be absorbed by current demand for milling purposes. These facts are men-

tioned to indicate that caution should be exercised in reaching conclusions concerning desirable reduction in wheat production in any particular region.

7. In planning wheat production for the United States the fluctuations from year to year must be taken into account. These fluctuations may be provided for by storage of considerable quantities of wheat in the better years to supplement the smaller crops of less favorable years. The storage of this wheat constitutes a problem in that it is usually undesirable to carry the same wheat in storage more than a year. Provision would need to be made for the moving of the stored wheat into consumption channels and the replacement of this wheat with the new crop.

8. The competition of other regions in the United States in wheat production would need to be considered. It is to be expected that wheat will continue to be grown as a part of the cropping systems in many regions that are outside of the wheat belt proper. Also, certain classes of wheat such as soft winter and white wheat are grown outside of the regions commonly referred to as the wheat belt. These wheats are needed and complete interchange of the various classes of wheat for consumption purposes seems neither desirable nor feasible.

9. As plans for the farms of the wheat belt are formulated and put into operation it is probable that the production of those crops and classes of livestock which supplement wheat production will be produced in somewhat greater quantities. As this occurs competition with regions where these products are the major sources of income will increase either through greater quantities marketed or through reduction of market demand by the quantities formerly purchased by farmers in the wheat belt but which, under the adopted farming systems, they may produce for consumption on their farms. Caution must be exercised to prevent the shifting of the agricultural problem rather than the solution of it through planning.

The assumptions and facts mentioned above and many others must be taken into account before planning for the agriculture of a particular section of the country is undertaken. The easiest method is to assume that the present situation will continue or that it will tend to revert to conditions existing at some previous time. Such an assumption may lead to error. A better plan is to forecast the changes which seem most probable and base the plan on such a forecast. The chance of error in such a forecast is great but it seems to be the best that can be done unless some central authority is in a position to decide all moot points and determine exactly

the policies and programs of this country as they are to be carried out in the years to come. In other words, planning for only a segment of the economic life of the nation is a hazardous undertaking, since the interdependence of this segment with other segments may be changed and the plans prove wholly unsuited to the need.

After these facts and assumptions have been determined and agreed upon, a plan for the region may be made. The plan for the region is for the purpose of securing the most desirable quantity of the major product produced under the most desirable conditions and combined with other products in optimum combinations. Before the plans for individual farms can be prepared the desirable total acreages of each of the principal crops and definite numbers of the livestock should be determined for the entire region to which the plan is to apply. Individual farmers must apply the plan and it must meet their needs. This phase of the problem may be solved by classifying the farms of the region by size and by types within the size groups. The problem in making plans for each size and type group of farms is to determine the most desirable combination of crops and livestock permitted in consideration of the other groups of farms and the totals desirable for the aggregate of all farms in the area. This means working out a budget for each size and type group and from these budgets determining the totals that will result if every farm adopts the suggested organization for its size and type group. If the totals are more or less than those desired then changes will need to be made until the totals approximate those desired. The combinations of crops and livestock determined upon for each size and type group of farms should be those which will return the farm operator the highest income under the prices and costs assumed in preparing the budgets. If this can be done the resulting combinations of crops and livestock will be those to which the farmer can change, if he does not already have them, and find that the change will increase his net income either by increasing gross receipts or by reducing operating expenses.

Such a plan is in process of preparation for Kansas. The task of working out such a plan is not a small one. There is no assurance how soon the Kansas plan will be completed. Neither is there any assurance as to how well it will solve the problem when completed. However, the attempt should add to the knowledge of how to do or how not to do such a thing.

If such a plan can be worked out, the next problem will be to get it into use on as many farms as possible within the region.

The methods to be used in securing the adoption of the plans will be determined, in large measure, by the decision of the federal government concerning the agricultural adjustment measures to be followed during the time when the plan is presented. Educational methods such as characterized the extension work prior to the inauguration of the adjustment program could be used. These methods are slow in securing results but the results may be more lasting and more satisfying than those secured by the use of other methods. The adoption of the plan might be hastened by continuation of the present adjustment program and compensating, in some manner, those farmers who cooperate by adopting the suggested plan.

In securing the adoption of desirable systems of farming, the use of credit as a motivating influence is too frequently overlooked. In many of the regions where the greatest adjustment appears to be needed the Farm Credit Administration has become the chief extender of farm credit. In western Kansas the Federal Land Bank holds mortgages on from twenty to twenty-five per cent of the farms in many counties. Strange as it may seem this has proved to be one of the safest regions for such loans. There is need for coordination of the lending, servicing and collecting policies of the Farm Credit Administration with the needs for adjustment in many of the problem areas. Many of the problems of adjustment probably could be solved through the influence exerted by extending or withholding credit or by the work done by those who service loans made by credit agencies.

The problem of planning for a region is a complicated one and is made more difficult by the fact that the planning is for only a small portion of the economic universe concerned. However, this should not deter the making of plans. Out of them undoubtedly will come much that is good. All of the plans will not be adopted but suggestions will come for the ultimate or partial solution of the many problems now perplexing the wheat belt and other agricultural regions.

AGRICULTURAL PLANNING AND FARM MANAGEMENT IN THE RANGE TERRITORY[1]

A. F. VASS
UNIVERSITY OF WYOMING

Agricultural planning for the range territory has involved five major phases of endeavor—

1. Reduction and adjustment of crops and hogs.
2. Cattle and sheep buying program.
3. The taking over of privately owned and unappropriated lands by the Federal Government.
4. The new set-up of the Farm Credit Administration.
5. Developing storage reservoirs for power, irrigation, and flood control purposes.

The first, the hog and crop reduction program, has been so over shadowed by the drought of the last year that the program, as such, has had no measureable effect on the farm management practices in most of the Rocky Mountain states. Hogs have never played a very important part in the farm set-up in this region, as the area has had a hog deficiency for many years, and the westward movement of hogs from the corn belt is of common occurrence.

Corn, being closely associated with hog production, naturally is not a very important crop as only about 1.3 per cent of the total crop is grown in the range area. The growing season is too short in many of the cool, irrigated valleys, and other crops like sugar beets, beans, potatoes and cotton are more profitable. The range territory may be said to be on an import basis in so far as corn and hogs are concerned.

The reduction of corn in the middle west may be expected to have an indirect effect on the major industry of the range territory, in that it will reduce the amount of feed available for fattening the cattle and sheep from the western ranges. The range territory and the corn belt states are closely allied in producing lamb and beef. Lambs weighing 60 pounds and steers weighing from 600 to 900 pounds are produced on the ranges, but they are not ready for the packer market. It remains for the corn belt farmers to put the additional 30 pounds on the lambs and about 300 pounds on the steers. A corn shortage and resulting high prices may make the feeding operation in the middle west

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economic Association, Chicago, December 29, 1934.

unprofitable and thereby weaken the demand for feeder steers and lambs. The condition prevailing at present is an excellent example of this maladjustment between corn and livestock prices. A farmer cannot, under present conditions, take 55-pound feeder lambs or 500-pound steers, as a gift, add the 35 or 350 pounds per head necessary to finish the animal for market, and make a profit. The cost of the gains put on is equal to, or more than the price received for the finished animal.

Large numbers of feeder animals were, the past season, moved from the ranges to the feedlots of the middle west on a contract whereby the feeder was to receive, for the gains he put on, the market price per pound for the finished animal. It was a rather absurd contract at the time, and it is not difficult to imagine the present position of the feeders. If beef cattle were commanding a price in line with present corn prices, they would be selling at three or more times their present price, as the price of the corn alone required to produce 100 pounds of beef is three and one-half times the present farm price of beef.

The writer has been unable to find a time in our history when the maladjustment between corn and beef prices was a great as it is today. The dairymen and other livestock producers face a similar situation. This maladjustment may swing to the other extreme by 1936, and be accompanied by the marketing of the smallest amount of beef per capita that the country has ever known. Although the above maladjustment between feed and livestock prices was brought on very largely by the drought, it shows very clearly what may happen when feed and livestock production are allowed to get out of line.

Any material change in the ratios of corn, hogs, and pasture in the corn belt will influence the farm management practice of the western livestock producers. A decrease in the corn acreage and a corresponding increase in pasture and hay, means that the farmer will not be able to fatten as many animals, and that a larger per cent of those he does finish will be raised on the farm, all of which means a very much lessened demand for range livestock.

Some of this loss can be taken up by more livestock finishing on the irrigated lands of the west, a practice that is increasing rapidly. A change in ranch management practices that would also take up some slack, would be for the producer to go back to the practices of the 90's and run fewer steers to an older age. Long three-year-old steers will fatten very satisfactorily on our ranges

and native hay. The younger the animal the poorer the finish on native grass and hay.

In the case of lambs, the situation is more difficult to meet for the consumer wants a young, fat lamb, which is a rather difficult animal to produce on the range. We might again, in this case, have to go back some 30 years in our ranch management practices and concentrate on wool production rather than wool and lamb.

It would be possible to make these adjustments in both the corn belt and the range territory, but I am inclined to think that it will be equally advantageous for the range producer to do the thing for which his ranch is best adapted, and for the corn belt farmer to stick to the finishing of feeders, a thing for which he has both ability and facilities. The farmer cannot compete with the range stockmen in producing feeder animals. Neither can the stockmen compete with the farmer in finishing steers and lambs.

It is hoped that the above facts will be kept in mind in any adjustment program, and that it will not be necessary to resort to the above suggested changes, of forcing the western rancher to finish his animals, and the corn belt farmer to produce his own feeders.

The reduction of cotton and the resulting relatively high price of $50 per ton for cotton seed cake, is somewhat out of line with 6c fat steers, 3½c feeder steers, and 2c cows. Soybean cake is now coming in from the Orient and is underselling cotton seed cake in Wyoming. Being higher in total digestive nutrients and protein, and lower in price, it is receiving considerable attention and may change the ranch practice in winter feeding on our ranges. The southern tier of range states will not be so influenced.

Acreage reduction of wheat has been general in the range states, which produce about 1/7 of the crop, but about the only marked results the past year were the benefit payments going to the producer. The drought took care of production on both contracted and non-contracted acreage. The plan of the federal government to buy up lands in the dry land areas, may have a tendency to restrict further expansion of wheat farming, with less people farming the same acreage.

The people who have been successful, and we find them rather evenly distributed in all regions, will probably remain in the dry land areas and take over the acreage allotments of the ones who leave, giving them larger units for operation. They will make an added effort to increase yields by better farming methods. More land will be available to the operator for summer fallow. We may

expect more of the capitalistic system of farming under the above conditions.

The large scale wheat farmer will combine livestock and thereby make use of the abandoned farms for grazing. The lands bought up by the Federal Government may afford him cheap grazing facilities.

The plan calls for a shift in population from the dry-lands, to irrigated lands that are now being developed under the power and reclamation program. The people who will be moved know very little about dry land farming, and even less about farming under irrigation. The fact that they have been unsuccessful in a region where others have succeeded does not increase their chances. Neither are they, as a group, as young and as ambitious as they once were. This will probably mean that they will be placed on small tracts, for the larger the tract or farm, the greater the loss unless properly managed. The farm management practices on these rehabilitated farms will be the ones recommended by the government, and will probably lean towards self sufficiency rather than the capitalistic system, as labor rather than capital will be the important thing. About 40 per cent of them may now be on relief but this percentage may be expected to increase when they are relocated, as the money paid by the government to the dry land farmers will be used to pay farm mortgages and other debts. Little or nothing will be left for the farmer.

The sugar best adjustment program is not one that will stimulate higher yields to a great extent, as a marked increase in the yield per acre in a district will call for decreased acreage. The favorable price for beets may however, tend to make certain individuals try and improve their own yields. Feeding of livestock on the irrigated farms may be increased, if corn belt feeding decreases.

It has been found in some areas that as agricultural planning takes the form of reduced activities, probably fewer people will be enaged in agriculture. Many farmers are more apt to expand their business in an effort to secure a higher cash income than to take more leisure. The farmer whose crop acreage has been cut twenty acres is likely to be interested in buying or renting twenty more acres of land having a base history, in order that he may keep busy and produce as much of the crop as formerly. This would eventually result in fewer people being engaged in agriculture.

In regard to livestock ranching, we may expect (1) a slow replacement of crop production by grazing; (2) with the Taylor

grazing act in operation, a return to large scale ranching; (3) even more difficult for a beginner to get started in the business; (4) less people will be required for a given number of cattle units; (5) control of the range may be limited to fewer operators.

The decrease in crop acreage and increase in pasture is not likely to result in an increase in livestock, as much of the dry land acreage has been used to produce forage for wintering livestock. A limiting factor in range livestock production is winter feed to supplement the ranges. Even during the present drought year the winter feed, rather than the summer ranges, determines the number that will be on hand next spring. Homesteading and dry land farming has tended to increase rather than decrease the number of livestock in states like Wyoming.

The range management practices in wool and lamb production will continue on much the same order. The Taylor grazing act is about the only measure with which the wool grower will have to deal and it is not likely to influence them. Sheep will continue to be run in bands of 1200 to 1500 ewes on the high summer ranges and in bands of about 2500 on the desert ranges in winter. Sheep are run on lands sub-marginal to almost all other forms of agricultural production, including wild life.

The cattle and sheep buying program was largely a relief measure, occasioned by the drought, and gave the ranchers more for their livestock than they would have received at the markets. The lack of feed make it necessary to move the livestock or else lose them by starvation. The number on hand April 1, 1935 would probably have been about the same in either case, as it is doubtful if there is more than sufficient feed to carry present numbers through the winter.

The prices paid by the Federal Government were not enough to move cattle that did not have to be moved. With the exception of old cows and ewes, the prices paid were about one-half to one-third the normal value of the animals and represented a loss of millions of dollars to the producers, which is not so evident on this year's income as the next two years ahead. The rancher's income this year represents the production of two or more years, and should be so treated in agricultural income studies, a condition commonly overlooked. Ranch inventories have been reduced in order to show the 1934 income. If the reduction program could have been started the first of the year, as was suggested, it would have saved enormous losses occasioned by not only the actual loss in weight, but in the condition of the animals.

The reduced number of livestock will influence, to some extent,

the farm management practices for a few years. Operators who have been selling long two-year-old steers, a common practice in the northern range states, will either have to sell younger animals or else make little or no sales. Those who are able to do so will probably follow the latter practice. With federal control of some range areas, the numbers may be held down for a few years, but with the return of normal rainfall we may expect to see numbers increase.

Precipitation seems to be the all important factor in influencing carrying capacity of western ranges. They may appear ruined at the end of a drought year, but a few wet snows and soaking rains will bring them back to their original bountiful condition. When one sees an article on over-grazing and ruined ranges, he can tell pretty well the year, and the season of the year the writer visited the range, and whether or not his observations were made near the bed grounds.

The Farm Credit Administration has been a very important factor in enabling the ranchers and farmers to continue sound management practices, and may enable the operators to retain ownership of the farms.

Ranchers in the range territory, especially those owning their lands, have not been able as a rule to earn the rate of interest prevailing in the region. A lower rate of interest is of great assistance to them.

The taking over of privately owned and unappropriated lands by the Federal Government will probably favor the large livestock operators and permit them to become larger. They will be able to handle more livestock with less men, do less winter feeding, and rely more on the range. With the grazing lands all controlled and allotted, it will be increasingly difficult for the beginner to get a foothold in the range area.

Homesteading and the passing of the grazing lands into private ownership were very important factors in breaking up the large land and cattle companies of the West. They could not meet the investment and tax charges on deeded land, as well as the smaller operator with a few hundred head of cattle. Federal control means tax free and investment free grazing lands, offset by a small grazing fee, a condition that permits large scale operation. Investment and tax charges represent about one-half of the cost of producing range cattle. With these costs greatly reduced the large scale operators should be able to prosper.

The maladjustment in the investment and tax load, between the stockmen who use federal property and the ones who must

own their own range, may become even greater than it is at present. The stockgrower who must own all of the land he uses, pays about three times more general property tax than the man who makes use of the tax free federal lands.

In regard to marginal lands, there is no such thing in the range states, in so far as livestock production is concerned. Sheep can make use of most any range that any form of wild life can use, and the fact that they can be moved with ease from one grazing area to another, from the desert in winter to the distant mountains in the summer, means that they can use ranges during certain periods of the year that even the wildest of wild life could not use the year around. The desert ranges are not fit for summer grazing due to the heat and lack of water, but are usable in winter due to the snow. The fact that it is easier to move and control a band of sheep than it is a herd of elk or antelope, makes it logical to use the desert ranges for sheep.

One writer on the subject of planned agriculture classified all grazing lands with a carrying capacity of 55 acres per animal unit, as uneconomical for livestock grazing and states that they should be used for recreation, game or forest purposes, or completely retired from active use. If this suggestion were carried out in the United States, it would practically eliminate the range sheep industry, as they are run on lands with a lower carrying capacity than the above. If foreign countries followed the same program it would eliminate sheep in the large wool producing countries like Australia and South Africa. The boundary line between cattle and sheep ranges falls very close to the 55-acre line, as it is the dividing line between grass and browse types of forage.

It seems desirable to establish game preserves in certain areas, and they should be established on the basis that they will be of more value to the people than domestic animals, not on a basis of sub-marginal lands.

The dry weather of the last few years, combined with the depression, has discouraged many of our people and they now favor programs that they are likely to be very much against with the return of normal precipitation and business conditions. If we are to formulate a sound land use program, it must be based on normal conditions, or else it will fail within a few years.

The construction of storage reservoirs for power, irrigation and flood control purposes, will increase the acreage of productive farm land and afford homes for those eastern farmers whose lands have become unprofitable, due to plant food exhaustion and erosion. If 35 million acres of crop land has been ruined by ero-

sion, and millions of acres more partly ruined, it is very evident that the rich fertile lands of the arid regions should be brought into use; lands that have not had the valuable mineral contents leached out, nor their surfaces washed away, due to the fact that the precipitation is light and the soils porous.

There is nothing new about the proper use of land, as the problem has faced every agricultural producer every year in the United States since 1492, and even the Indians were not far out of line in using lands in a way best fitted to their needs. The homestead law is sound in principle, but weak in that the farm unit is based on acreage rather than on production or carrying capacity.

The land use program of the United States during the last half century has been based on what would seem to be rather sound economic principles, although there is no reason for thinking that it cannot be improved. The law of diminishing returns has played a very important part in determining what crop lands to turn back to pasture and forests, and when the less accessible but more fertile lands should be opened up.

Starting with 1850, the New England states occupied an important position in the nation's production of crops and their acreage of improved lands in farms increased up to 1880, but since that date the decline in improved acreage has been downward until in 1930 it was less than 38 per cent of the acreage 50 years earlier. The Middle Atlantic states showed the same downwards trend, declining 38 per cent in the last 50 years.

The east north central states had a rapid increase from 1850 to 1900, held their own for the next 20 years, and showed a decline from 1920 to 1930. The west north central states started with only a few million acres in 1850 and finished with over 184 million acres in 1930. From 1880 to 1930 they gained over 230 per cent while the New England states lost 62 per cent. The west south central states which include Oklahoma and Texas, have shown a marked increase from 1850 to 1930.

A study of the Rock Mountain states shows a phenomenal increase from 183,000 acres in 1850 to 45 million in 1930. The increase from 1910 to 1930 was at an annual rate of one and one-half million acres.

The need for more farm land is rather evident from a study of our population increase and crop production decrease of the last 14 years, during which time population increased about 20 per cent, while the production of food and feed crops decreased about 35 per cent, based on the total digestive nutrients produced by 17 of our major farm crops. The drought of the present year ac-

counted for about one-half of this decrease. Total digestive nutrients in crops is used as a measure because other forms of foods depend thereon for their production. Our standards of living depend very largely on the per cent of our diet which comes from livestock and livestock products.

Feed and food production per capita in 1934 was less than two-thirds the amount produced in 1920, and after allowances have been made for the loss of export markets, and reduction in work animals, the amounts available for consumption mean a somewhat lower standard of living than we have been accustomed to in this country.

If the same sound economic principles that have been adjusting land use in the past are allowed to continue, we may expect a gradual development of the more fertile lands of the semi-arid and arid regions, and the return of the unproductive and badly eroded lands of the humid regions to pasture and forests. The power developed in connection with storage reservoirs may have a marked influence on our farm management practices as well as bring about much better living conditions on our farms.

AGRICULTURAL PLANNING AND FARM MANAGEMENT IN THE DAIRY REGIONS OF THE MIDDLE WESTERN STATES[1]

GEORGE A. POND
UNIVERSITY OF MINNESOTA

Several phases of the planning program of the Agricultural Adjustment Administration might be expected to have some effect on the management of dairy farms in the middle western states. These include the wheat adjustment program, the corn-hog adjustment program, the dairy marketing agreements, the cattle buying program in the emergency drouth areas, and the program for the elimination of cattle affected with Bang's disease. At least, these programs are or have been in active operation in the Middle West. The tobacco adjustment program might also be mentioned but it affects too few farms to merit consideration in this connection.

It is too early as yet objectively to measure the effect that these planning measures have had on the management of dairy farms or, in fact, of any other type of farm in this area. As yet production statistics that would throw some light on the subject are not available. Furthermore the severe drouth of the past year has overshadowed all other causes of shifts in production. It has completely distorted the picture. It has necessitated administrative rulings modifying the terms of existing adjustment contracts and has been an important factor in determining the form of corn-hog contract for 1935. In view of these facts, one can only speculate as to what effect the various planning measures might have on farm management under more nearly normal conditions of production.

The wheat adjustment program could not be expected to have much effect on the organization of dairy farms because wheat is in general a minor crop on dairy farms in the Middle West. The seeding of the contracted acres to hay and pasture crops might encourage a slight expansion of dairy production. Because of the drouth this did not occur. Even the ruling that permitted the harvesting of forage crops on contracted acres did not result in increased feed for dairy cattle although it did serve slightly to offset some of the drouth losses.

The corn-hog adjustment program affected the dairy farmer

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economic Association, Chicago, December 29, 1934. Approved for publication as Paper No. 1327, Journal Series, Minnesota Agricultural Experiment Station.

much more than the wheat program. Corn is an important feed for dairy cows, both as grain and roughage, in all but the most northerly part of this area. In the butter and cheese areas, skimmilk and whey are available as a by-product of the dairy enterprise, for feeding hogs. The corn-hog contract permitted the dairyman this usual supply of silage. The reduction in hogs approximately balanced the corn reduction so that with normal yields the dairyman would have his usual feed supply for his dairy herd. As in case of the wheat plan, the use of the contracted acres would tend to increase the supply of pasture and forage and thus encourage an increase in dairy production. Furthermore a certain amount of labor would be released by the reduction in corn and hogs that might be available for the dairy enterprise. If the dairy production was maintained at its previous level there would be the same quantity of skimmilk available for feed as before but less hogs to consume it. In some cases the skimmilk ration of the hogs might be increased advantageously. In other cases where the hogs were getting as large a proportion of skimmilk as they could use to advantage before the adjustment, some increase in poultry might be effected to utilize the skimmilk released by the reduction in hogs. The labor released by the reduction in corn and hogs might encourage the expansion of the dairy enterprise or possibly an increase in the poultry flock.

The 1935 corn-hog contract will have more of a tendency to encourage expansion of dairy production than did the 1934 contract. By substituting barley and oats for corn, the dairyman will raise almost as much concentrate feed as though he grew his normal corn acreage. This is especially true in such states as Wisconsin and Minnesota. However, feed supplies have been so seriously depleted by the drouth that, at least for another year, the farmer will still be short of feed and this is only a one-year contract. Hence this tendency can work out only to a very limited extent if at all.

The milk marketing agreements, in so far as they tend to increase the price of milk, might be expected to encourage expansion of dairy production. However, it should be remembered that in the vicinity of most middle western cities there is a larger area of potential market milk territory than is needed to supply the local market. A price for milk fixed by a marketing agreement materially above the level of manufactured dairy products might serve to attract large supplies now going into manufactured products or to induce an expansion in nearby territory. This increase in supply with no increase in consumption would

decrease the proportion that could be sold as fluid milk. Even though the price of fluid milk was raised by the marketing agreement, the net price to the producer might be enhanced little if at all because of the lower price of the larger surplus over fluid milk requirements.

The buying of cattle in the emergency drouth areas served largely as financial relief for the farmers concerned. In practically all cases, the sale of the cattle was made imperative by lack of feed. Some of the money received for the cattle purchased by the government was undoubtedly used for purchasing feed for the cattle retained but much of it was used to cover current living and operating expenses. The cattle-buying program operated to a considerable extent as a culling program in case of dairy cows. The effect on milk production would therefore not be proportionate to the numbers purchased and hence not as important as its effect on beef production. Only a relatively small proportion of the dairy regions in the Middle West was included in the government cattle-buying program and hence its effect was decidedly limited.

The program providing for the purchase of cattle affected with Bang's disease promises both immediate and permanent benefit to the dairyman. For a number of years, dairymen have not been culling their herds as rapidly as would normally be considered good practice. The low price of both cull cows and replacement stock has discouraged sales. Fixed charges have decreased far less rapidly than have the prices of dairy products. The farmer attempted to offset the effect of these low prices on his income by increasing his production. As a result, numbers of dairy cattle have increased beyond the capacity of the farms to supply feed. The drouth has greatly aggravated the feed shortage. The selling of infected animals will relieve some of the pressure on depleted feed supplies. It will also have the long time effect of aiding to control an insidious disease that is limiting efficiency in dairy production. Lasting gains to the dairy industry will accrue but the program can hardly be expected to affect farm management other than through restoring a healthier balance between cattle and feed supplies.

Dairying is a relatively stable type of farming that does not lend itself to rapid adjustments. A large investment in buildings and equipment is required. The herd itself not only represents a considerable investment in capital but in an area where the dairyman raises his own replacements it represents years of breeding and selection. Dairying is not an enterprise that can be

adopted or dropped readily. It is therefore not to be expected that temporary measures, especially when they effect dairying only indirectly, would influence the organization of dairy farms materially. Only in case they were continued over a period of years could they be expected to have appreciable effect.

Another reason for the stability of the dairy type of farming in most mid-west areas where it is predominant is the lack of alternative opportunities for employment of the farmers' resources. This is especially true in the butter and cheese areas. Because of soil and topography, and, in some cases, because of climate these areas can not compete in corn production. Fields tend to be small and often irregular in shape because of topography, the presence of stones or rock outcrop, poorly drained areas, and similar conditions. This condition makes uneconomic the use of the large scale machinery that is essential to low cost wheat production. Considerable areas of land are adapted only to pasture or hay production. Dairy cattle can use such feed advantageously. They provide a market for considerable labor and thus make possible a larger business on a limited area than would beef cattle or sheep. Considerable carbonaceous concentrates are needed to finish beef cattle. Our dairy sections, as already noted, are not able to compete in corn production. They are likely to be better adapted to small grain. Small grains, since they are higher in protein content than corn, are better adapted as a concentrate for dairy feeding. Corn is often more important as a source of roughage than as a concentrate. Since there is little in the way of alternative enterprises to compete with dairy cattle in the areas where dairying is a major enterprise, it is hardly to be expected that any phase of agricultural planning now in operation will result in significant changes in farm management. Even though dairy production might be expanded in other areas so as to depress the price of dairy products it will not affect farm organization in these acres. These dairymen have too few alternative opportunities to which to turn. They do, however, have certain advantages in dairy production. It seems quite conceivable that they may increase their efficiency to the point where the new producers with less advantages for dairying or with better alternative opportunities in other lines will be forced out.

There are considerable areas in the Middle West in which dairying is a relatively minor enterprise. In these sections dairying is given a place in the farm organization largely because of its complementary and supplementary relationships to other enterprises. Except as these relationships are disturbed by any of

the adjustment programs, little change in dairy production will occur. There are, however, considerable areas where in the past a "milk and beef" type of cattle enterprise has been maintained. In recent years, the price of dairy products has been relatively more profitable than that of beef and other competing products. As a result, dairy production has been expanded at the expense of meat production. The rapid increase in dairy production in Iowa and western Minnesota during recent years represent this type of shift to a considerable extent. If the corn-hog adjustment plan or any other feature of the agricultural planning program should make meat production relatively more profitable, this shift to dairy production should be reversed. From the standpoint of the dairy farmer, this would be a "consummation, devoutly to be wished." The competition afforded by the so-called "red cow" dairymen has always been a "thorn in the flesh" to the specialized dairy industry.

The prices of the principal dairy feeds, both concentrates and roughages, have risen sharply during the past year. In many cases, they have doubled and in some cases trebled in this area. This has forced a sharp cut in dairy rations and will result in the continued culling of dairy herds. In sections that depend heavily on purchased feeds, especially drastic reductions in dairy production may be expected. This feed shortage with the resulting high prices is, however, very largely the result of the drouth. With normal weather conditions, we might have expected some rise in feed prices. The wheat adjustment would cut down the supply of wheat by-product feeds. The reduction of corn acreage under the corn-hog contracts would not decrease supplies of corn for feeding proportionately since hogs, the principal consumers of corn, were correspondingly curtailed. Some enhancement of corn prices might be expected. Curtailment of the cotton crop would tend to decrease the supply of cottonseed meal and hence increase the price of high protein concentrates. On the other hand, hay and pasture supplies would increase somewhat as the result of seeding down the contracted acres.

The probable result of this expected increase in the price of concentrates and the larger supply of roughage and pasture would be a shift in the dairy ration. In so far as the additional roughages were legumes and the seeded pastures were of good quality, this should result in lowering the cost of dairy products. Undoubtedly, dairymen in much of the Middle West have depended too largely on concentrates for increasing their dairy production and have neglected the roughage supply both as to

quality and quantity. Alfalfa hay, where it is adapted, will produce nearly as many pounds of digestible nutrients per acre as corn and the higher proportion of protein will make them better adapted to the dairy ration. Legume hays and pasture crops are desirable from a general farm management standpoint because of the part they play in maintaining the productivity of the soil and in controlling weeds and erosion. Within the limits that this shift to pasture and roughage feeding is likely to occur as the result of the A.A.A. adjustments, it should result in some definite gain to the dairyman who raises his own feed. On the other hand, it is entirely possible that the dairy farmer who depends largely on purchased feeds may be so disadvantaged that he is forced to curtail his production. The net change in the production of dairy products resulting from this shift would not be great but there would be some gain in quality of farming through the increased use of legume hays and of pastures in dairy feeding.

Thus far no plan of direct dairy adjustment has been put into operation. In view of the lack of agreement among the dairymen themselves as to the desirability of such a plan or as to the form such a plan should take I do not have the temerity either to discuss plans that have been offered or to sponsor a plan myself. I have attempted to confine my remarks to the plans which in general affect dairying only incidentally or indirectly. It is apparent that drouth conditions the past summer have so complicated the situation that no one can separate the effect of agricultural planning on farm management from the effect of feed shortages. My general conclusion is that under more nearly normal conditions of production the corn-hog adjustment plan and, to a lesser degree, the wheat adjustment plans would probably have resulted in some increase in dairy production, especially in the sections where dairying is a major enterprise. There are also some grounds for assuming that in areas where dairying is less specialized there might eventually be some shift from milk to meat production. If the price of competing products are enhanced sufficiently, the farmer may shift some of his feed, labor and other resources from dairy production. At most, the net result would be no more than a minor increase in dairy production. The increase could hardly be sufficient to be considered a material change in dairy farm organization and management in any general sense.

AGRICULTURAL PLANNING AND FARM MANAGEMENT—DAIRY REGIONS[1]

A. G. WALLER
RUTGERS UNIVERSITY

When I was requested to prepare this paper, the honor you may be sure was deeply appreciated, but my chief difficulty in adequately preparing such a document has to do with the small matter of defining agricultural planning. It may be that when all the wrinkles of the present disturbed economic times are ironed out we may all need or will have found new definitions, from what we now have in mind, for such terms as "emergency," "money," "planning on the entirely voluntary basis of course," and other similar items.

However, as one keenly interested over the span of years in the development of farm management I am glad to make a few statements as I see them and keep within the time limit prescribed. I am still a believer in arithmetic and hope that those planners, who would for instance start with ten, take away five, and then tax something or other so as to end up with prosperity for everybody, are not in for a vast disappointment. I wish there were a way to make something out of nothing. Now since the general trend is toward planning for some time to come, I think the logical idea would be to plan for everything and not merely for a certain small number of products, and plan so that proper rewards were paid on the basis of location, investment, quality factors, as well as certain cost items. Taking one commodity by itself introduces such a chain of circumstances all along the line, having direct and indirect effects on so many other matters, that if you stop control there, you have only begun the difficulties. I am assuming at the present moment that the agricultural planning term will continue to involve benefit payments at least as favorable as those in existence today. This may be presumptuous, and it may be so at some time because of one or two or both groups of human beings, namely, producers and consumers.

The northeastern states (New England and Middle Atlantic states) will be meant for the large part of my remarks, and let us call those nine states the North Atlantic group. In order to picture adequately what agricultural planning might do to farm management or vice versa in the dairy regions of these states, it is necessary to understand the background of dairying as it now

[1] This paper was read at the Twenty-fifth Annual Meeting of the American Farm Economic Association, Chicago, December 29, 1934.

is. Farm management is the man plus the farm with all its enterprises, plus all the possible relationships that can exist from such associations, and then some traditions.

The northeastern farmer has struggled through the generations to meet competition from a growing West, and South, from improved transportation, etc., and has continually met the threat by adjusting his farm management to meet the situation. I have no fear of his ability to meet the present situation if it is not accompanied by too large preferential payments to competing sections.

Yet the big thing to my mind, aside from this bonus idea, is this, the human being who receives less than he benefits from planning, is going to reverse that situation as best he can. Plain arithmetic will not permit planning, however skillfully done, to be of equal benefit for all sides concerned, and farmers are not all on the same side of any one plan, from the selling and buying standpoint. If the price of feed is going up because of some plan, he is going to buy less feed, use it more carefully, and grow more of his own if humanly possible. If the price of livestock or cows is going up without particular enhancement in price of sale product, he is going to pay more attention possibly to raising his own or buying nearer at home. Then too there is the possibility that is being pushed to quite an extent in some quarters of pasture development and use, for a longer period of the year as well as for obtaining greater part of feed supply. I mention these particular items because they may have a very material bearing on the ultimate end of the planning which primarily might be for the grain belt farmers.

Much of the planning as I observe to date, has in it, the seeds of not improvement alone for a particular commodity, but suicide also to a material extent. It is all very well to enhance the price of cotton or wheat or corn to the producer of that product for sale, but you are not by the same plan at least, assuring the customer of that product of any greater ability to buy at the increased price. The North Atlantic states, according to 1930 census, spent $222,102,990 for animal feed, largely imported from other states and sections, including also poultry feed. Now is it desirable for this market to be lessened?

We all know that in the normal growth of regions, certain changes take place in a gradual and healthy manner. Thus we have seen in our northeast over the course of years, the development towards production in a relatively intensive way of perishable food products, whether it be vegetables, fruit, fluid milk, eggs

or what not. Some statistics are useful in considering the circumstances under which we are producing, as well as to analyze what would be the best method of assistance and what also would be the effect of plans proposed or in effect.

We have in the nine northeastern states, according to the 1930 census, 28 per cent of the total United States population with 21.4 per cent in the three Middle Atlantic states. The population in New England averages 131.8 and in Middle Atlantic states 262.6 per square mile, as compared with 41.3 for the United States. In classifying this population as urban and rural, the census shows 38.7 per cent of the total United States urban population to be in these two groups of states. This situation in itself brings a train of circumstances for agricultural production in this region, namely, (1) an unequalled market, (2) higher labor costs, (3) higher taxes, (4) higher investment per unit of production, (5) more intensive methods of production, (6) advantages—fresh food products, and (7) more direct and less transportation costs.

Under these conditions we have adapted and maintained a healthy, substantial agricultural industry in the northeast. The same census reports nearly a half million farms (482,428) with a total investment of about three and three-quarter billions of dollars (this was probably at the peak). It is rather significant that only 6.3 per cent of the farms in New England and 14.7 per cent of those in the Middle Atlantic states were operated by tenants as compared with the average for the United States of 42.4 per cent. It is also rather significant that farm real estate values in these two groups of states did not pass through such a great speculative spree as in other regions with accompanying expansion of debt. In 1920 the peak year, when the average index of farm real estate value was 170 for the United States as a whole, it stood at 140 and 136 for the New England and Middle Atlantic states. Another reflection of stability is in the number of farms going through a forced change of ownership, this stood in 1933 at 54.1 per 1000 farms in the United States compared with 19.8 and 28.3 in the two groups of northeastern states.

I would like to stress somewhat these points as they are important from the standpoint of stability, and as indicators of speculative developments and factors that have operated in other regions to bring on difficulties which planners are trying to correct. They also reflect the fallacy involved in applying a uniform plan the country over that does not take into consideration regional differences. It is not reasonable to suppose that all regions

are equally responsible for a difficult situation in a particular type of agriculture.

You will also find that measured in volume of production, the North Atlantic states have on the whole remained much more steady over the years just passed, than other areas more distant from market, where they have been somewhat flighty in attempting to find a profitable enterprise, with rather unsatisfactory results to all concerned.

In approaching this subject for presentation from a larger viewpoint than the New Jersey one, with which I am the most familiar, I made inquiry on the dairy situation and received replies from nine states from Maine down the coast. Certain general comments ran through these replies, some of which might give pause to some kinds of planning. First of all, the general impression seemed to be that less grain was being purchased for feed and that more attention was being given by the individual farmer to his own cropping program, particularly hay, pasturage, and other roughage. One state commented that feeding their own grain a little more extensively, together with whatever hay and pasture could be developed, might well mean a less balanced and effective ration but it would also mean a smaller cash expenditure. Another opinion expressed was that improvement in the business world of employment, etc., would take care of the milk problem. The basic rating price plan was mentioned several times as being a most effective means of planning. Several states indicated that their dairies were probably not being run to full housing facilities.

One writer writes he "believes that dairy farmers, either individually or collectively, are much more capable of planning their own business than anyone—in any central point." I am heartily in accord with this quotation as it brings us back to the farm management angle of the agricultural planning ideas, or rather the lack of such an angle, and the significance of wholesale planning that omits the efficiency side of producing a given commodity. It seems incredible that planning on such a uniform procedure, omitting efficiency, location, investment, could be expected to result in anything but confusion, or it conceivably might develop less and less exchange of product, due either to substitution or direct competition.

In analyzing the dairy farm management reaction to agricultural planning, it is necessary to have in mind the different kinds of dairying that exist. Planners do not always seem to realize that dairying is not just dairying and any broad plans devised do

not by any means have the same effect on all of those responsible for the milk production in an area. The average production per cow in the North Atlantic States has been around 20 per cent higher than the United States' average during the last five years, although since 1929 the average in the North Atlantic States has declined from 5,387 to 5,139 in 1933, due to less feeding of concentrates and relationship existing between prices.

In 1929 the North Atlantic states reported 2,890,000 milk cows and in 1930 2,948,000 cows. According to the 1929 census in these same states 380,110 farms reported cows milked and of this total 151,940 had 1 to 3 cows, 53,440 had 4 to 5 cows, 85,510 had 6 to 10 cows, 64,660 had 11 to 20 cows, and 24,560 had 21 or more cows per farm. The nearly 40 per cent of the farms in the 1 to 3 cow group had only 9.3 per cent of the total cows in the area, while the 6.4 per cent of the farms falling in the 21 or more cow group had 26 per cent of the total cows in the area. It is quite apparent that a single plan could not possibly affect in the same way such vast differences as exist between individuals, farms and locations. Yet any substantial group, unless in the plan, voluntarily or otherwise, could ruin the plan.

This wide degree of variation is only from the standpoint of one factor; namely, size of herd. The type of dairy farm is fully as important in its reaction to planning. Briefly, we have, with variations of course, the following kinds of dairying:

(1) Highly specialized—where herds are rather large and climate, topography, soils and markets only permit dairying through use of pasture land and hay and purchase of practically all concentrates.

(2) General farming, with dairying—small herds, rotation of crops (corn, oats, wheat, hay) and considerable amount of home-grown feed.

(3) Dairying with cash crops—(vegetables, tomatoes, potatoes, tobacco, occasionally fruit, where topography, soils, climate and markets available permit.)

(4) Near the cities there are many producer dealers who are producing intensively on small area, relatively high in value, and taking care of both production and marketing. This group usually buys all its concentrates and a large part of its hay or roughage.

How can a single plan be arranged that would be of like benefit to these different kinds of dairymen? From a standpoint of farm management the individual has to consider his own resources, as the plans which may be offered do not alter his own situation so

far as investment, taxes, usually labor, and over-head are concerned. It is uneconomic for the producer and consumer alike to accept uniform agricultural planning although of course there will always be parts of each group benefiting as well as losing.

Efficiency of production and the individual's knowledge of his own capabilities and resources are still the large parts of planning. I should like to call attention to a rather illuminating statement by P. L. Putman in the Economic Digest from Connecticut State College for September 1934, indicating "adjustment on 29 identical dairy farms, 1929 to 1933." The first sentence reads "Grain fed per cow was reduced 653 pounds on 29 Connecticut dairy farms during the five-year period 1929 to 1933 without any loss in milk production." Alfalfa, pasture improvement, and other careful details of management, accounted for this decrease in feed purchased without decreasing milk production, in fact the production increased.

Pennsylvania bulletin 305, April 1934, states on page 60 that "Crop production will no doubt be directed more toward the growing of dairy and poultry feeds rather than of cereals for sale."

Several well defined movements may be under way to improve pastures by treatment so that they may be used earlier and later. thereby cutting down feed purchases.

The dislocations of production arising from piece-meal or commodity planning, either through actual part of the plan or through difficulties of enforcement, are going to be tremendous. Who knows what will be the result of the release from any restriction of corn land for other purposes. It will take farm management of an expert sort to meet whatever the changes may be.

When all is said and done, and planned, however, farm management or efficiency in running the farm will still be present and be rewarded though the degree of reward may not be the same.

It should be mentioned that farm management over the period of years at the urge of economic conditions, has caused the dairymen to make distinct changes in the distribution seasonally of their milk production in order to even out the supply from nearby sections.

There may well be other types of agricultural planning, but there is no time here to discuss them, although I think there may be some possibilities in connection with marketing developments which would offer some material help to agriculture.

Summing up rather briefly,

(1) The present manner of fixing up one commodity at a time is only leading to greater confusion.

(2) Farm management can meet and will meet on the part of the individual the various confusions.

(3) If we are to have planning in agriculture let us have it apply to everything so as to avoid confusion, at least for the time being.

(4) Changes in practices of feeding, dairy management and crop management may seriously affect the grain growers' market, thereby creating some more confusion.

NOTES

(Editorial Note: Dr. H. B. Price, Agricultural Experiment Station, Lexington, Kentucky, is the associate editor in charge of the Notes. Manuscripts for this section of the Journal should be addressed to him.)

COMPETITION AND OLIGOPOLY[1]

Two recent books in the field of imperfect competition[2] develop some concepts which are useful in the analysis of some current agricultural economic problems. The purpose of this note is to apply these concepts to the working out of a solution to the question—why is it that during depression, agriculture responds by maintaining production at reduced prices, while industry responds by maintaining prices and reducing production?

The statistics of the case are familiar to all. During the depression, agriculture maintained production at full capacity, while agricultural *prices* fell to 40 per cent of their 1926 levels. But industry followed the opposite tack. For example, in industries dominated by a small number of very large producers, namely the iron and steel and the automobile industry, prices were maintained above 80 per cent of their 1926 levels, while production fell to 20 or 25 per cent of the 1926 figures.

What is the explanation of this contrast in the behavior of prices and production in the two contrasted industries? Explanations of a general nature, in terms of the contrast in the number and size of the producers, or of differences in the elasticity or shiftability of the demand or supply curves, or of the different proportions of fixed to variable costs of production throw some light on the problem; but they do not reveal clearly and sharply the production and price determining mechanism through which such factors work.

The value of Chamberlin's and Robinson's concepts is that they do provide a sort of laboratory working model of this mechanism. They also direct attention to points at which further statistical research is required, in order that the model shall the more accurately represent the working of the original machine.

Application to Agriculture

The situation in agriculture is well represented by Chamberlin's diagrams which show conditions in an industry of numerous small-scale and competitive producers. Under such conditions, the demand curve for the produce of any one farmer is practically a horizontal straight line. The individual farmer's produce is so small a proportion of the total production in the country that the market will take Farmer Jones' 10 hogs or 100 hogs or 1000 hogs, at the same price at which it will take his one or two hogs. The total demand curve for hogs for the country as a whole may be relatively inelastic, (as indeed it is in the United States) but for the output of any one farmer, it is almost completely elastic.

The cost curve for any one farmer is a line with a strong upward concave curvature. This results from the fact that on the ordinary corn belt

[1] Journal Paper No. J-271 of the Iowa Agricultural Experiment Station, Ames, Iowa. Project No. 383. The author wishes to acknowledge his indebtedness to Mr. Edward H. Chamberlin for his constructive criticisms and suggestions.

[2] Chamberlin, E. H., "The Theory of Monopolistic Competition," Harvard University press, 1932. Robinson, Joan, "The Economics of Imperfect Competition," Macmillan, 1933.

hog farm the costs per hog are high if only a few hogs are produced, decreasing as more and more hogs are produced until the point of lowest unit cost is attained,[3] and rising thereafter.

This cost curve is tangent to the demand curve. Strong forces are continually at work to bring this condition about. If the farm is a good farm, costs were originally lower than prices, and the cost curve cut down part way through the horizontal demand curve. But as soon as the farm changed hands, or was rented, the buyer or renter incurred an extra charge —land payments in the case of the buyer, rent in the case of the renter— which, added to his costs, raised the whole cost curve roughly to a position of tangency with the demand curve.

Effect of Depression

Now when depression comes, the demand curve shifts downward. Consumers in the country as a whole will pay less for hogs than they would previously. The individual cost curve is left, as it were, suspended in mid-air. The producer's profits turn into losses. It is of no avail to him to cut production; the most profitable (or least loss-ful) number of hogs for him to produce remains roughly the same as before. His only recourse is to try to shift his cost curve down until it again becomes tangent to the demand curve.

The behavior of agricultural production during the past few years shows the result of working of this mechanism. In the face of a reduced demand, the farmer, seeking the greatest profit or the least loss, has continued to produce roughly the same amount as before. Prices have fallen heavily. The decline in prices was extreme, because the total demand for all foods is much more inelastic than the total demand for any one food, such as pork.

Conditions in Industries of Large Scale Production

Let us next consider the situation in an industry characterized by large scale production methods. In such an industry, if production were all concentrated in the hands of one producer, the demand curve for his product would then be identical with the demand curve for the entire industry. If production were concentrated, not in the hands of one producer but in the hands of a few producers, the situation would fall either at one or the other of two extremes, or somewhere between, according to conditions which are set forth below.

One extreme is represented by the demand curve for any one producer that would exist if he could reduce his prices and expand his production, without thereby causing his competitors to reduce their prices too. Under these conditions, the elasticity of his demand curve will be high or low, depending upon the preference of buyers for that producer's particular product. The relationship is inverse; if the preference is slight, the elasticity will be great.

The other extreme is the situation in which a reduction in the price that was initiated by any one producer would be instantly met by similar reductions in his competitors' prices. The demand curve representing

[3] It may be observed that the curve is necessarily elastic throughout. Even in the most extreme case, where all the costs are fixed costs, the slope of the cost curve (on double logarithmic paper) cannot be less than 45 degrees, or unit elasticity. In practically all cases in actual life, some variable costs are incurred, as well as fixed costs. And the addition of these variable costs makes the cost curve more elastic than the curve based on fixed costs only.

this situation may approach the same elasticity as that of the total demand curve.

In this situation, if the number of producers is small, and each producer refrains from cutting prices because he knows his competitors will follow suit, each producer's demand curve will be as inelastic as the total demand curve, the same as if he were a monopolist. This situation may be called oligopolistic competition.

The fact that the steel and automobile industries do not reduce their prices and maintain their production when depression comes indicates (although it does not prove) that these industries follow the second course of action outlined above. That is, each producer knows that if he reduced prices drastically his competitors would be obliged by his act to follow suit, and all would lose heavily. Accordingly, each one acts substantially as if her were the sole producer. The demand curve for each producer, therefore, has the same elasticity as the total demand curve for the product of the entire industry.

In a situation of this sort, when depression comes and the demand for the product declines, the demand curve shifts downward. The cost curve for each producer, therefore, is no longer tangent to the demand curve; it has lost contact with the curve altogether. Each producer, here as in the case of the farmer producing under conditions of pure competition, will seek to readjust his operations to the new conditions. He will seek to lower his cost curve until it again becomes tangent to the demand curve.

If the demand curve for the product of each individual producer were highly elastic, as it is in agriculture, the result would be the same as in agriculture: Prices would fall and output would be maintained at roughly the same amount as before. But, for reasons explained above, where there are only a few competing sellers, the demand curve for the product of each is likely to have the same elasticity as the total demand curve. That is, the demand curve is likely to be more or less steeply sloping. And this may greatly affect the way in which the producer responds to a depression, i.e. to a downward shift in the demand curve.

Effect of Change in Elasticity

The fact that the demand curve is sloped does not necessarily affect the producer's response. If the demand curve shifts downward, and the producer shifts his cost curve downward too, the new point of tangency will be straight below the old one. That is, the price will be reduced, and production will be maintained at the same rate as before. This is the same result that would follow if the demand curve were horizontal, as it is in the case of the small scale agricultural producer.

It is not the slope of the demand curve, however that is necessarily significant. It is *changes* in the slope that are important. If a depression not only shifts the demand curve downward, but also renders it less elastic, a new element is introduced into the picture.

It happens that both of the large-scale industries considered here produce durable goods. Now "A fall in demand due to a cyclical movement of trade is likely to be accompanied by a reduction in elasticity in the case of durable goods, the replacement of which can be postponed to better times, for only the most urgent demands for the goods will be

effective during the slump even if price is considerably reduced. A rise in price may therefore be an appropriate response to a fall in demand."[4]

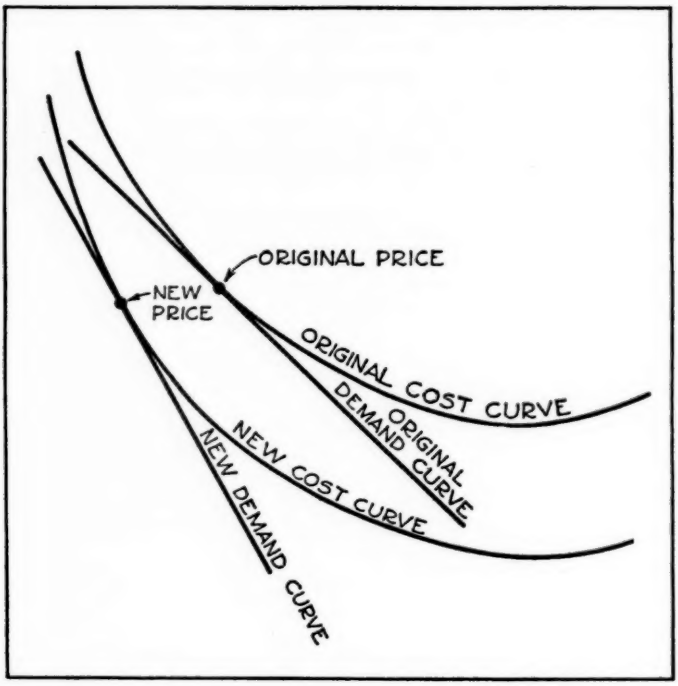

FIGURE 1. Demand and cost curves after demand has decreased.

The situation that would result from this decrease in elasticity as well as reduction in demand is shown in figure 1. Here the new point of tangency is to the left of the original point; and it is only slightly below the original point.[5] In other words, it pays the producer to reduce his production and maintain his price. And this is precisely what happens in the steel and automobile industries.

The automobile tire industry, on the other hand, illustrates a somewhat different situation. It is an industry characterized by large scale production methods and few producers, as is the automobile industry and the iron and steel industry. Yet prices have fallen and output has been maintained at a fairly high rate during the depression. Why is this?

There are two possible explanations. One explanation is that price competition where there are only a few sellers may lead to approximately the same results as if there were many sellers. If one or two producers cut prices, disregarding the ultimate adverse consequences for everyone, that will cause prices to fall as under pure competition. The difference between the results in the automobile and iron and steel industries, on the one hand,

[4] Robinson, Joan, Economics of Imperfect Competition. p. 73.
[5] It could, very possibly, lie to the left and *above* the original point, if the decrease in elasticity were great.

and the tire industry, on the other, may be simply an illustration of the fact that price determination under oligopoly varies according to the extent to which producers take into account the effect of their price cutting upon the prices of others.

The other possible explanation traces back to differences in the nature of the product. Tires are a less durable product than automobiles, or iron and steel. It may be that the elasticity of the demand for tires does not decrease much during depression; tires continue to wear out and have to be replaced much the same during depression as during prosperity. The influence of changing elasticity, which tends to keep prices up in the automobile and iron and steel industries, is therefore slight in the tire industry. This may be the major reason why the tire industry has behaved more like agriculture than like the steel or automobile industries, even though tire production is concentrated in the hands of a few large producers.[6]

Need for Research

The suggestions given above are not intended as answers. They are intended simply as hypotheses, as signposts pointing the way toward fruitful avenues for further research. We need the data that will enable us to draw demand curves and cost curves based upon actual performance in the plant, on the farm and in the market place. Especially do we need research to verify or disprove the hypothesis of reduced elasticity of demand for durable goods during depressions. It is hoped that research workers with the time, the facilities and the contacts needed will be able to accomplish something along the lines indicated.

Geoffrey Shepherd

Iowa State College

THE USE OF FARM ORGANIZATION AND BUDGETARY DATA AS A BASIS FOR LAND VALUATION

The recent status of values and market prices for agricultural lands, and the concomitant problems of the effect of the disappearance of equities and earnings upon land credits and revenues, have given rise to a valuation concept for credit purposes of "normal values," or "normal earning values" for agricultural land.

The development of this "normal earning value" concept is based upon the belief that the performance of land values in the past was the resultant largely of forces other than the capitalization of the revenue available to support land values, and upon a general conviction that such land values as have recently existed represent a "distress" market condition, from which something approximating a "normal" condition of farm land values must soon emerge, when the economic and social forces that make land values work out to their new resultant.

---

[6] It is possible that neither of the two explanations suggested is correct. It may be that tire prices have fallen because of technological improvements, which may have greatly reduced the costs of making tires since the depression began. Investigation by an economist well versed in the tire industry is needed here. There will be a certain amount of decrease in elasticity resulting from some decrease in the total number of cars being operated. But the decrease in total number of cars operated will be much less than the decrease in the total number of *new* cars bought (the latter number being the significant figure in the decreased elasticity of the demand for cars). In the extreme case, during depression the sales of new cars might drop almost to zero, at the same time that the total number of cars operated remained unchanged; the old cars (all but those that were about to fall to pieces) could all be run a year longer than usual, so that the total in operation and using up tires would remain unchanged.

But there is also a feeling that fundamental changes have been occurring in these forces. Deep-seated and fundamental change, in fact, affecting the tap-root of economic life with respect to individual and social behavior and motives affecting land ownership and the forces that make land values.

Workers in the field of research are being asked to formulate principles and methods for the calculation of "normal" farm land values in terms of dollars and cents, and to apply such principles and methods to specific problems.

It is difficult to enumerate all of the questions of principles involved which pass through the economic scientist's mind when he confronts himself with this problem. Possibly the following are typical:

1. Do the historical trends of actual market values of land afford a basis for deriving a hypothetical "earning value normal" or indicate the probable future trends of land values?
2. Can the historical behavior of the costs other than land rents under various sets of price conditions as prevailing in the past, be used safely as a guide in arriving at earning values for land by process of imputation, or are such costs liable to perform differently in the future under comparable prices for agricultural production?
3. Are land rents truly a "residual share" in the distribution process, or may they be subject to change due to investment in land improvement and development?
4. To what extent are the forces entering into the determination of land values measurable in regard to the extent to which the distributive shares (labor, interest, and land income) in agricultural production are expressed in terms of market price?
5. How are changes in general price levels to be treated in attempting to derive dollar and cent figures for a "normal value" for agricultural land based upon its earning capacity?
6. Does not "normal value" imply an equilibrium toward which society must be tending, on the basis of our present system of economic organization, and may not the institutional basis of, for example, saving, capital formation, and interest payment, be radically altered?
7. What may be the effect of group and government action to "pull in the margins" in agricultural production, and plan and rationalize agricultural production, upon the value of agricultural land generally, and upon the rent differentials between different grades of land?
8. What may be the effect of further changes in production technology and farm organization upon land uses and values?
9. How is the principle of marginality and differential efficiency of producers or farm operators to be treated in setting up standards for land valuation by the use of farm organization and price and cost data?
10. How much of a factor in the typical or representative farm business are "management wages," or are farm owners willing to capitalize all labor income above competitive farm wage rates into land values?
11. What may be the effect of changes in the rate of population growth, the rate of capital accumulation, in food habits, and in land ownership psychology, upon the social and individual demand prices for land?

In other words, the student of economic science who is aware of change in the intensity and direction of economic forces, approaches this problem

with the feeling that the forces that determine land values "are not what they used to be," and that any reckoning on the basis of the past must be tempered with the best possible scientific guess as to present and probable future changes in people's feelings and motives, in technology, and in political and economic organization and human relations in society.

This is not meant to imply that there is no body of principles and set of working tools applicable to this problem, or that they should not be used. Old value-making forces may change in intensity and direction and new forces may appear, but as long as anything similar to our present basis of political and economic organization continues, we will still be seeking to define and measure the forces behind competitive supply and demand, and chart the past and probable future course of values.

As a background of an illustrative case in land value imputation by the use of farm organization and budgeting data and procedure, let us attempt to name what appear to have been the major supply and demand forces in the determination or agricultural land values, and examine them for apparent and possible future changes.

On the demand side we can name:

1. The inherent land hunger of the population of a dynamic young nation, a large part of whom were eager to acquire land as a means of establishing a permanent home, a job, a place in community life, and were willing to use the land as their "savings bank."
2. The anticipation by land owners and purchasers, of the future of a past trend for a growing population and capital accumulation to cause a constant enhancement of the value of a naturally limited resource—land.
3. The earning power of the land, above wages to labor and interest to capital not "sunk" in the land, on the basis of the technology and farm organization, the production costs and selling prices, prevailing during the recent experience of farm owners, operators (and speculators).
4. The status of the organization of the investment markets for land credits, as affecting the supply of capital available for land finance. (This should probably be described as a passive and permissive rather than an active factor among the demand forces.)
5. The feelings of people as to the relative desirability of the farm as a place to live and make a home, as affecting the rate at which land owners and operators are willing to capitalize land income.
6. The apparent relative security of investments in agricultural land as affecting the ratio between earnings and purchase price.

Good orthodox economics would probably attempt to list all of the value-making forces for agricultural land on the demand side, since natural resources are supposed to be "non-reproducible" in contradistinction to "capital," as a reproducible productive resource, having a schedule of supply prices.

But there appear to be good reasons, both in theory and practice, which need not be discussed here, for treating certain forces on the supply side of land, defining "land" as a potential capacity for producing food and raw materials. Probably this definition would not bear any closer theoretical analysis than many other attempted definitions of "land," but is can hardly be denied that the return in economic rent to the natural producing capacity of land is subject within rather wide limits to the competition of a capital investment in land to more or less permanently im-

prove the productive capacity of the land resource, and on the basis of such a definition of "land," its supply can be expanded considerably and by several means:

1. The enhancement of the productivity of land already in use, through permanent capital investment.
2. The reclamation of land area for agricultural uses through drainage, irrigation, etc.
3. The changing of land use and rent margins by the evolution of production and farm organization technology, as for examples, improvements in efficiency in cultural practices and livestock breeds, dispiacement of animal power by mechanical power, etc.
4. The development of sea foods industries.

There is no need for any extended discussion here regarding recent changes in these forces. We know that they have changed and will continue to change. These forces are only partially reducible to quantitative measurement and treatment, and to the extent that his is the case, they can only form a background for empirical analysis and judgment. Some of these forces may have changed to the extent that for instance, land ownership, instead of discounting a rising increment of land values based upon a growing population and a declining natural resources, may have to discount a decrement of value due to a stationary or a declining population, an enhanced land productivity, and a decreasing per capita use of food and fibres. As a result prevailing land income may in the future be capitalized above rather than below the current return to industrial capital.

In any attempt to treat the problem of land value imputation by the use of farm organization data and costs and prices by budgeting procedure, land taxes are a factor, apart from supply and demand forces, with which one must reckon. There may be theoretical limits above which land taxes "in the long run" cannot rise, but the mobility of agricultural capital and population has in the past been such that within a decade or even for decades, the land tax can affect the capital value of farm lands immediately and directly by claiming more or less of the income that is available to pay a return upon such capital values in land. It may be argued, with reason, that such taxes merely represent the payment for services through another channel than through competitive markets, and that they may represent a productive investment or an enhanced standard of farm living, and actually are not a "charge" against land income. But they may represent a payment to support services accruing only partly to the farm.

The use of farm organization budgetary data and budgetary procedure for land evaluation purposes is most workable for the larger and more specialized types of farms and ranches. The ratio of investments in land improvements to land values is apt to be lower, family labor and other costs which are not expressed in terms of market values will not be so large, and it is easier to work out the organization data and develop a workable series of cost and price rates, and to study the behavior of cost rates (other than land change) in relation to price changes.

If such data are to be generalized rather than applied to individual farm organizations, the approach may be through a standard farm organization, and grades of land based upon the crop yield and livestock carrying capacity of such different land grades.

The standard organization in such case may be developed from the

"bulk line" which generally appears in farm management survey and accounting records, of about 60 per cent of the farms included in such a study. A lower 20 to 25 per cent of the cases are generally not meeting their current costs even under a favorable price situation, and an upper 15 to 20 per cent of the farm cases are making a high rate of return, due generally to better bargaining ability or circumstances which are apt to be largely fortuitous.

There appears to be no good reason for attempting to impute a managerial wage. The bulk of operator-owners do not earn it or are willing to capitalize everything above competitive farm labor wages, and possibly even a part of that, into land values.

On the basis that use alternatives exist for it, there is a reasonable basis for calculating interest on the value of investment in equipment at current rates, or upon the outlook for such rates, whether this investment represents borrowed or operator-owned capital.

There also appears to be a good reason in the historical basis of economic forces for treating land taxes as different from other operating costs, and considering real estate taxes as a deduction from the residual available to support land values. There is a fairly clear historical tendency for real estate taxes to approximate about one-third of the revenue available over a series of years to support land charges or land rentals.

M. H. Saunderson

Montana State College

CONTACTS OF RURAL PEOPLE IN ORGANIZATION MEETINGS

One of the most promising methods of studying group life in a neighborhood, community or trade area, is to determine the extent of the contacts that the individuals of a group have. This has popularly been described as the "go-to-meeting" tendency of individuals. One of the first scholars to emphasize the importance of contacts in rural communities was Dr. C. J. Galpin. While connected with the University of Wisconsin, he pointed out in writings and speeches that the lack of human contacts of a stimulating and vital nature was one of the most severe handicaps of farmers as an occupational group. Dr. H. B. Hawthorne in his book, "The Sociology of Rural Life," in 1926, presented the method which he had developed for measuring these contacts. He stressed that not only the quantity but the quality of such contacts must be taken into consideration.

A study in three Kentucky communities[1] by Fred Boyd, W. D. Nicholls and the writer, was undertaken in 1931, to determine some of the factors that influence the quantity of organization contacts among white farmers of this state. It was decided that the individual must be considered as a unit when measuring these contacts, because age and sex are very important influences to be studied. While family traditions, wealth, formal education and other family experiences influence the amount of contacts, the individual variations are usually more important than these family differences and the family differences become easily distinguished when measured in terms of the individuals concerned. A contact is defined as exposure of a person to group influence for one hour at a general meeting of an organization. This is a contact hour.

[1] "Rural Organization Contacts in Three Kentucky Communities," Ky. Agr. Exp. Sta. Bul. No. 350.

For Kentucky communities, it was found, when formal education contacts (school attendance) are excluded, that religious contacts furnish 90 per cent of the total number. Ignoring the matter of quality, we can by this method obtain a better understanding of the responsibility which organizations assume for the use of the time of citizens in the community.

When organizations of a specialized nature become more highly developed in a rural community they in turn assume more responsibility for the improvement of the individuals and the group which they serve. This measurement of the contacts offers a possibility of testing the degree of urbanization of farm families if we assume that special interests are associated with and spread in concentric circles from community centers of influence. This assumption presents a possibility of studying contacts by mapping the individuals in relation to their trade center or county seat town. The question is frequently asked, "Do families that live on good highways and near large cities have more contacts than other families in the same community but living in more isolated parts of the community?" Or, do families on the edge of several communities tend to identify themselves with these several communities and thereby weaken their total contacts to the point that this can be detected numerically? The latter assumption has been made by a few students of rural society but definite data are lacking. The Kentucky sample was too small to get conclusive evidence on this point. It could be more effectively studied in a statistical sample of regional or statewide proportions. The chief interest in the study in the three selected communities was to measure the extent of variation due to age, sex, formal schooling, land tenure, church membership and any other individual factors that might be discovered to be significant in this state.

Females were found to average about 25 per cent more organization contacts than males, when age groups were held constant. Young girls aged 15 to 19 inclusive led all other groups, both male and female. This same age group led among males but had only about three-fourths as many contacts as the females of this age. The young people of school age who are not attending school were found to have a smaller number of contacts when compared with other individuals in the same age group. The high school age, 15 to 19 years, was inspected very carefully and community differences proved quite significant. In the one community that provided excellent organization opportunity for young people not attending school, it was found that school attendance was not significant as affecting the number of organization contacts for these young people. This age group would therefore be considered susceptible to community leadership for group activities of an organized nature. This is the beginning of the courtship period for youth and offers the most results for the effort expended by community leaders in attempting to meet longer lifetime objectives of individuals. The present day interest of the Federal Agricultural Extension Service and of the Extension Service in several of the states indicates the timeliness of studies in this field of social research concerning rural youth.

The 204 persons living in rented houses averaged one more contact per person than the 515 persons living in owned houses. In one community 65 per cent of the persons attended only religious organization meetings, and 59 per cent of the persons in the three communities together attended no other type of meeting.

The preponderance of religious contacts in the three communities focuses attention on the possibility of helping this institution or human interest to more completely serve the needs of the community. Is there any valid reason why adult education should be developed separate and apart from the religious organizations of the community? A large percentage of the same individuals will be members of any general organization in the rural community. The present day tendency to establish a new organization whenever we have a new function to perform, has been definitely found wanting in efficiency in many rural communities. When practically the same leaders and a large percentage of the same membership are persuaded to take on a new function, why should we insist that a new organization be created? This may be one important factor in an explanation of the futility of many of our present day community endeavors. It is significant that a locally and voluntarily financed organization furnished the preponderance of contacts in these rural communities. Various state and county leaders nominated these three communities as significant for a study of effective community organization.

Merton Oyler

Kentucky Agricultural Experiment Station

APPLE PRICES IN THE ANNAPOLIS VALLEY, NOVA SCOTIA

In a recent price study analyzing the sales returns obtained for ten standard varieties of apples in ten Annapolis Valley cooperative fruit companies, for the four years 1930-33, some interesting information was obtained as to the price differentials which have existed during this period amongst these varieties and amongst the various grades and sizes of these varieties.

The price differentials existing between large No. 1's and large Domestics, between small No. 1's and small Domestics, between large Domestics and small Domestics, and between large No. 1's and small No. 1's, are shown in Table 1, by apple varieties. These price differences are given as averages for the ten companies and are first expressed in dollars, and then in percentages of the price received for the first mentioned grade in each comparison. Study of these differentials in the latter form is necessary in order to determine their true significance as indicators of market reactions to the various sizes of the two commercial grades. This is particularly necessary in comparing one variety with another, since variety price levels are usually on different planes.

Some rather noteworthy differences are shown in this table. For example, the spread in price between large No. 1's and large Domestics of the culinary varieties is distinctly smaller than for the dessert kinds. The drop from the No. 1 price in the case of Blenheims is 45 cents per barrel, or 20.6%; of Kings 54 cents per barrel, or 20.5%; of Starks 47 cents per barrel, or 20%. The drop in price of Ribstons is 72 cents per barrel, or 30%; of Northern Spys 75 cents per barrel, or 28.2%; of Gravensteins 54 cents per barrel, or 27.4%. The price spreads between small No. 1's and small Domestics, while slightly larger, run in about the same proportions as between large No. 1's and large Domestics.

The distinction as between culinary and dessert varieties is maintained when comparing prices of large Domestics and small Domestics, but in

this case the price spread is greater in the culinary varieties rather than the dessert kinds. The per cent drop in price runs from as much as 18.5% in Starks, 20.3% in Baldwins, and 14.4% in Blenheims, down to 1.6% in Ribstons, 5.6% in Golden Russetts, and 10% in Gravensteins. The astonishing thing about this column is the drop in price between large Domestics and small Domestics which is shown for Northern Spys, amounting to 49 cents or 25.6%. This is probably a reflection of the fact that small, green Spys are of no use for dessert purposes, and their size lessens their value as a cooking apple.

TABLE 1
SHOWING PRICE DIFFERENTIALS BETWEEN GRADES AND SIZES FOR TEN VARIETIES OF APPLES FOR FOUR YEARS 1930–33, IN TEN FRUIT WAREHOUSES

Variety	Diff. between price of 2½" up #1 & 2½" Dom. per. brl.	Percent Diff. is of large No. 1 price	Diff. between 2¼"–2½" #1 & 2¼"–2½" Dom. per brl.	Diff. between 2½" up Dom. & 2¼"–2½" Dom. per brl.	Per cent Diff. is of price large Dom.	Diff. between price large #1 & small #1 per brl.	Percent Diff. is of price large #1.	Diff. between price of large #1 & small Dom. per bbl.	Percent this Diff. is of No. 1 price
	$	%	$	$	%	$	%	$	%
Gravenstein	.54	27.4	.68	.19	10	.05	2.5	.73	37.0
King	.54	20.5	.58	.21	10	.16	6.0	.75	28.5
Blenheim	.45	20.6	.44	.25	14.4	.25	11.4	.70	32.1
Ribston	.72	30.0	.69	.04	1.6	.07	2.9	.76	31.6
Wagner	.64	26.2	.76	.29	16.1	.21	8.6	.93	38.1
Baldwin	.72	27.2	.69	.39	20.3	.41	15.5	1.11	42.0
Golden Russett	.96	24.2	.92	.17	5.6	.21	5.3	1.13	28.5
Stark	.47	20.0	.34	.35	18.5	.48	20.3	.82	34.7
Ben Davis	.65	26.4	.75	.27	14.9	.18	7.3	.92	37.4
Northern Spy	.75	28.2	.95	.49	25.6	.18	6.7	1.24	46.6

TABLE 2
COMPARING VARIETIES ON BASIS OF WEIGHTED AVERAGE RETURNS FOR TEN WAREHOUSES OVER FOUR YEARS

(Vertical columns show the 4-year average price returns per barrel by varieties)

Warehouse	Grav.	King	Blen.	Ribs.	Wagn.	Bald.	G.Russ.	Stark	Ben D.	Spy
No.	$	$	$	$	$	$	$	$	$	$
1.	1.58	2.29	1.88	2.23	1.90	2.00	3.72	2.07	1.96	2.03
2.	1.83	2.51	2.12	2.16	2.02	1.92	3.11	2.02	1.87	1.92
3.	1.43	2.36	1.92	1.92	2.08	2.13	3.37	1.83	2.02	2.20
4.	1.43	2.34	1.83	1.79	2.10	1.87	3.59	1.97	1.82	1.73
5.	1.60	2.13	1.89	2.40	2.22	2.25	3.59	2.24	2.14	2.36
6.	1.56	2.53	1.70	1.56	2.18	1.93	3.20	1.79	1.82	1.93
7.	1.53	2.06	1.61	1.94	1.84	1.88	3.62	2.20	2.19	1.99
8.	1.75	2.00	1.68	1.81	1.66	1.66	2.96	1.61	1.57	2.00
9.	1.59	2.58	2.03	1.85	1.93	2.03	3.38	1.82	1.85	1.86
10.	1.59	2.23	1.89	2.18	1.81	1.94	3.46	2.21	1.87	1.80
Average ten warehouses	*$1.59*	*$2.30*	*$1.85*	*$1.98*	*$1.97*	*$1.96*	*$3.40*	*$1.98*	*$1.91*	*$1.98*
Percent Average Price is of 1930 Price	*81.1%*	*80.9%*	*77.0%*	*80.4%*	*71.1%*	*80.0%*	*91.8%*	*80.8%*	*75.2%*	*77.9%*
Percent 1933 Price is of 1930 price	*45.4%*	*58.8%*	*45.8%*	*63.8%*	*41.4%*	*63.2%*	*84.9%*	*72.2%*	*66.2%*	*66.5%*

In many ways, the most surprising spreads are those between No. 1, 2½" up and No. 1, 2¼-2½". We have heard it claimed that a Number 1 was a Number 1, and that small apples were worth just as much as larger sizes, but data in this table tend rather definitely to disprove this claim. It comes nearest to being true in the case of certain dessert apples such as the Ribston where the spread is only 7 cents per barrel, or 2.9% of the

large No. 1 price; the Gravenstein where the spread is 5 cents per barrel, or 2.5%; and the Golden Russett where the spread is 21 cents, but which is only 5.3% of the No. 1 price. In the case of culinary varieties, however, the spread is substantial, being as much as 48 cents, or 20.3% of the large No. 1 price in the case of Starks; 41 cents, or 15.5% in the case of Baldwins; 25 cents, or 11.4% for Blenheims.

The last two columns in this table, giving the difference in price between large No. 1's and small Domestics, are also noteworthy. The actual price spreads between these two grades run from 70 cents per barrel in the case of Blenheims, to $1.24 a barrel in the case of Northern Spys. This latter difference amounts to 46.6% of the No. 1 price. Further indication of the substantial difference in price levels between these two grades is shown by noting such other varieties as Baldwins, for which there is a spread of $1.11, or 42% of the No. 1 price; Wagners with a spread of 93 cents, or 38.1%; Gravensteins with a spread of 73 cents, or 37%; and Ben Davis with a spread of 92 cents, or 37.4%.

Table 2 has been arranged to compare varieties on the basis of the money that they returned to growers over the four-year period under review. On this basis Ribstons, Wagners, Baldwins, Starks, and Northern Spys were practically on a par, varying from one another in return per packed barrel, only from $1.96 to $1.98 as an average of ten warehouses. Two other varieties dropped slightly below this group, Ben Davis' at $1.91 and Blenheims at $1.85, while one variety, the Gravenstein, dropped markedly below any of the others, and to a plane which over the last four years can scarcely be considered to have netted the growers a satisfactory return. Its average return was only $1.59. Two varieties were outstanding in the money they brought to their growers during this four year period. These were Kings with an average barrel return of $2.30 and Golden Russetts with an average return of $3.40. The remarkably consistent sales returns of Golden Russets over this four year period have been most outstanding, while to a somewhat lesser degree this has also been true of Kings.

In the second column from the last on this table, is shown the per cent that the above mentioned average prices were of the 1930 prices, which were in all cases the highest of any of the four years under consideration. This column shows that roughly, Gravensteins, Kings, Ribstons, Baldwins, Starks, and Spys brought over the four years an average price about 20% less than their 1930 prices. Ben Davis' and Blenheims brought about 25% less; Wagners about 30% less, and Golden Russetts only about 8% less.

The last column shows the per cent that the 1933 price was of the 1930 price. From this it is seen that Ben Davis', Spys, Baldwins and Ribstons brought in 1933 about two-thirds of their 1930 price; Starks nearly three-quarters; Kings about three-fifths; Gravensteins, Blenheims, and Wagners less than half; and Golden Russetts well over four-fifths of the 1930 price.

It can thus be readily seen from these last two columns that it is the fall varieties that are taking the heaviest punishment under existing marketing conditions, while those varieties that can be marketed throughout the winter are holding up much better. These price trends would indicate statistically, the soundness from the standpoint of price return, of in-

creasing production of winter varieties relative to fall kinds, under Nova Scotia conditions.

C. M. Collins

Department of Agriculture, Nova Scotia

PUBLIC UTILITY CONTROL OF MILK IN WINNIPEG[1]

The following synopsis is contributed in order to assist students of milk marketing to appraise the methods of milk control in this area and elsewhere. The data were obtained through the courtesy of the Public Utility Board.

Fluid milk supply per year about seventy-five million pounds. Average price paid producer $1.41 per hundred. Sixteen million pounds surplus; (winter 17%, summer 30%). Distributors paid Board price for 3.68% more than they sold as fluid milk. Three large distributors handled 75% of the pasteurized milk business. In this market area there are 135 producer-distributors of unpasteurized milk supplying about 23% of the demand. There are 9 pasteurizing plants, 450 drivers, and about 1000 storekeepers handling retail milk.

A veterinarian from the Provincial Board of Health now inspects producers' premises, of which there are about 900. The cost of this inspection is carried by the milk administration, which levies one cent per pound on distributors, and one cent per pound on producers. The total cost of administration is approximately $12,000 per annum. The milk administration staff consists of an administrator, two inspectors and a stenographer. Inspectors make surprise visits to distributors' plants, wagons en route, and retail stores. They check drivers' load sheets, returns, ledger accounts, and shippers' accounts against monthly returns supplied to the Board by distributors.

Every distributor deposits with the Board a sum of money based on a fixed minimum, plus so much per wagon. On conviction by the Board of a breach of its orders the distributor must pay a penalty or fine which is taken from the guarantee or deposit fund. No court actions have been taken and no publicity given to infractions of the Board's orders.

Average prices and spread are as follows: (Imperial quarts)—Delivered 10.2¢; Stores 8.1¢; Relief 9.2¢; Wholesale 7.5¢; Weighted average sale price 9.06¢; Weighted average spread 4.66¢; Weighted average delivery costs 2.4¢.

H. C. Grant

University of Manitoba

[1] *Editorial note:* This note supplements an earlier discussion by H. C. Grant on the same subject. See JOURNAL OF FARM ECONOMICS, Vol. XV, No. 3, p. 476-488, July 1933.

BOOKS RECEIVED

Boddy, Francis M., *Federal Expenditures in Minnesota.* Minneapolis: University of Minnesota Press, Day and Hour Series, Bul. 11. 1935. 22 pp. $ .25.

Davis, Joseph S., *Wheat and the AAA.* Washington: The Brookings Institution. 1935. XVII, 468 pp. $3.00

Fagan, Elmer D. and C. Ward Macy, Editors, *Public Finance.* New York: Longmans-Green & Company. 1934. XIII, 960 pp. $4.75. (Reviewed in this issue.)

Hardy, Charles O., *The Warren-Pearson Price Theory.* Washington: The Brookings Institution. 1935. VII, 34 pp. $ .50.

Langhaeuser, Kurt, *Valorisationen. Eine Studie über ihre Methoden und Wirkungen.* Hamburg: Hans Christians Druckerei und Verlag. 1935. 296 pp. RM 4.80.

Lyon, Leverett S., and Paul T. Homan, George Terborgh, Lewis L. Lorwin, Charles Dearing and Leon C. Marshall, *The National Recovery Administration.* Washington: The Brookings Institution. 1935. XVII, 947 pp. $3.50.

Schmeckebier, Laurence F., *International Organizations in which the United States Participates.* Washington: The Brooking Institution. 1935. X, 370 pp. $2.50.

Sering, Max, unter mitarbeit von Heinrich Niehaus und Friedrich Schlömer, *Deutsche Agrarpolitik auf geschichtlicher und landeskundlicher Grundlage.* Leipzig: Hans Buske Verlagsbuchhandlung. 1934. V, 194 pp. RM 6. (Reviewed in this issue.)

Wheat Studies, Vol. XI, No. 8, *Spreads between Wheat Prices in England.* Stanford University: Food Research Institute. 1935. 18 pp. $ .50.

Vol. XI, No. 9, *World Wheat Survey and Outlook, May 1935.* 1935. 31 pp. $ .50

Vol. XI, No. 10, *International Wheat Policy and Planning.* 1935. 45 pp. $ .75.

Willis, H. Parker, John M. Chapman and Associates, *The Economics of Inflation.* New York: Columbia University Press. 1935. XI, 443 pp. $4.50.

BOOK REVIEWS

New Frontiers, by Henry A. Wallace. New York: Reynal and Hitchcock. 1934. Pp. VI, 314. $2.00.

In general this book has been hailed as a philosophical essay of an idealist. It has a strong moral and religious appeal. Perhaps above everything else the author speaks from a conviction that the world, and more particularly the United States, has changed fundamentally within the past forty years, with the major part of the changes centering in the period since the World War. The title of the book is a happy one. Americans are still close enough to the old frontiers to visualize the meaning of the term frontier, connoting as it does, expansion, hope, hazard, and hardship. The new frontiers are less physical, and the application of the word to the new ventures is somewhat figurative, but as such it fits perfectly. No one will object to the infiltration of the teachings of the Sermon on the Mount through the fabric of business as the author predicts, even though he may not see in the past and present of the social order under which we live a device which "carries out and intensifies the law of the jungle."

It is refreshing, mainly because so rare, to receive from the hand of a man high in political office a frank, even bold, statement of the facts concerning the insidious, self-seeking, despicable wiles of the powerful in business as they ask, often in the name of patriotism, for action which will inure to their own personal advantage and profit. In his own words: "But if the full truth were ever known about the way in which government influence has been used by great corporations, public indignation would know no bounds." The Secretary admits that farm organizations, as well as others, often seek government favors to promote their own purposes, rather than those of the general welfare. This consideration leads to the very short, clever chapter on "Personal Devils." While devil fighting has not always been done with intelligence the author seems to hope that, with better understanding, we may keep the fight going. In the same vein is the chapter on "Hot Spots—Pressure Groups and News Drives," in which some of the weaknesses of democratic government are disclosed.

The Secretary on various occasions, orally, has expressed a lack of faith in economists and economics. Nevertheless the four chapters: "The Tariff," "Monetary Policy," "Cost of Production in Agriculture and Industry," and "Some Prices Don't Come Down," show that he is distinctly familiar with economic terms and methods, and that he handles these broad subjects very much as economists do. Within little over a dozen pages he treats the tariff in a masterful way, showing a much keener insight into the ramifications of the subject than did Congress and the two Presidents which gave us the inevitable but indefensible tariffs of 1922 and 1930. Under these tariffs we enjoyed a "favorable" balance of trade which is giving us an "America Self Contained," a foreign debt, uncollectible, and a herculean task of readjustment. The frankness and simplicity of the chapter on the monetary policy is a reassurance to those who have believed, sometimes perhaps without loads of proof, that the present economic muddle is not to be cleared up by money magic. On this problem the Secretary has less faith in inflation than he appeared to have some years ago. To the significant remark, "It is difficult for any Ad-

ministration to establish a fair, sound money policy unless the people themselves really understand and support it," one feels almost obliged to add: And unless the Administration itself understands, as well as supports it. The author apparently favors the plan providing for a credit expansion corresponding to the expansion of physical production, but does not venture into the entanglements involved in compelling its realization, or its results in case it should be artificially forced into existence. The last two sentences of the chapter carry the crux of the farmers' interest in prices: "Every time the farmer goes to the store he becomes less interested in the general price level and more interested in the relation of farm prices to other prices. A balanced relationship between these prices cannot be maintained by monetary policy alone."

The discussion of cost of production and its relation to prices leaves little to be desired: "Cost of production is a false guide to prices over any long period of time." "Cost of production looks too much toward the past. . . . if cost of production were recognized legally, there would be a tendency toward an ever-ascending spiral of prices raised by an increasing overhead." Since the discussion of the cost of production doctrine is so excellent it seems a little strange that the author should feel called upon to confess that, apparently recently, he has been "getting more and more skeptical of the term 'Cost of Production'" (p. 103) and still more surprising that there should slip into the book some pages later (p. 167) when speaking again of the cost of production as a price determinant that: "Something of this sort may eventually be necessary." Neither is it clear that "The true guide to prices is a concept based on that state of balance or ratios which make it possible for the economic organism to keep functioning with the least disturbance possible." For instance it was not a disturbance within the economic organism *per se* which led to the exclusion of women from the mines in England. Neither was it such a disturbance that led to an interference in behalf of the "breaker boys" in Pennsylvania. Mere harmony, the Secretary will surely admit, is not of itself a proof that the economic organism is in perfect order. In the same general vein the use made by the author of the words "fair" or "fair division" seems to lack definiteness as a basis on which to determine the division of income. As an ultimate solution of the problem of distribution the "fair division" prescription will rank with the discovery of certain old-time philosophers who found that the only needful rule of conduct was to "do right." The chapter on land is excellent. The one on "Smoothing Out the Cycles" is interesting and hopeful. The "ever normal granary" idea, however, is a desired consummation under conditions which we still hope will not obtain.

After recounting, and illustrating, the fact that during a depression the worst feature of the disturbed price structure is the tendency of prices to act anything but symmetrically, some going down hardly at all, some a little, and others dropping to half, or even much less of their former proportions, the author remarks that our price structure is half of steel and half of putty. The analysis and the analogy are both good. The suggested remedy, or the machinery by which a remedy may be fashioned, is not so clearly pictured, or at least not so clearly acceptable, as the diagnosis and exposition of the case. The Secretary says: "For a balanced operation of our economic machine, labor and consumer must be built

into the structure of industry. . . . Can labor, and particularly the consumer, effectively share in the industrial policy?" Without which the fear is expressed that we shall continue to have industrial policy made to create profits at the expense of abundance. This brings up a whole volume of doctrine, for the most part one not yet written, concerning the role of profits in promoting welfare, or causing depressions. Relatively the pre-depression, and the pre-war periods were characterized by plenty, rather than scarcity.

Along with the refreshing candor and clearness of the Secretary in his handling of the complex questions of agriculture under the New Deal are evidences of concepts which are not fully developed and which, therefore, leave the reader in doubt. For example, many economists will be puzzled over the frequently expressed hope for "Economic Democracy." Just what this term implies is no doubt still open to discussion, but with the majority of readers who have given it any attention it is a near synonym for Socialism. Apparently the Secretary has nothing more radical in mind than the present crop "control program," or the devaluation of the dollar, both of which are logical, though not frequently used, parts of a purely capitalistic program. Should we favor Economic Democracy and work toward it, just what would be its advantage, and what would it, itself, be? Is it the same as the "Cooperative Commonwealth"? Presumably the term, not a very happy one, is used to designate the program of the New Deal, in which there is a mixture of local democracy in goodly measure, with, thus far not a very alarming measure, of government bureaucracy. We shall have to go very much farther in the way of social control over the production and distribution of economic goods before the term Economic Democracy as usually understood will apply.

On page 252 a summary of the main arguments of the book appears under four counts. In the second of these one of the ideas mentioned above is repeated by way of emphasis: "But our economic machinery for distribution and consumption was always based on the theory of competitive scarcity." Undoubtedly so. These are the very essentials of capitalism, the system under which we live. Unquestionably it has its drawbacks. The failure of the economic machinery to work as we would wish is in the nature of a price which we pay for the privilege of operating the machine. And what is more it was not alone the inherent defects of the machine which brought us to grief. It was our failure to get along with the rest of the world sufficiently well so as to keep the wheels moving. No one better than the Secretary appreciates the tragedy of the breakdown of foreign trade, and the degree to which it has brought disaster at home. If we continue under capitalism we shall continue to operate under the profit motive. Moreover, under the profit motive, if the competitive economic regime is to be so characterized, it must be admitted that a great deal of progress resulting in widespread social welfare was accomplished. Some statements in this book might lead one to think otherwise. Distribution will not be based on sentiment, but on contracts and bargains made under the general rules of the game. And the same general relationship between values and goods, in view of their scarcity, will continue. We hope for an era of abundance, but the parcelling out of the share to be received by the workers will in some manner be in accordance with the existing scarcity. When scarcity ceases, goods will be free.

Mr. Wallace apologizes for having prepared the copy for this book hastily. It is easy to understand that such might well have been the case, and pardonably so. Nevertheless it is unfortunate that a book so outstanding in conception and general plan should be marred by so many statements which cannot be accepted at face value. It is regrettable that some of these doubtful and unfortunate expressions, which are not in any sense required in support of the main thesis, might not have been subjected to more deliberation and perhaps friendly criticism before reaching final form. True enough, and more is the pity, great numbers of people will read the pages undiscriminatingly.

In spite of the apparent necessity of disagreeing with Mr. Wallace respecting certain details of the book, the thinking people of the country, interested in agriculture, are profoundly thankful to have in the cabinet a Secretary of Agriculture who can turn out a piece of work like "New Frontiers," a work sorely needed, and which will undoubtedly prove a great help in clearing up some of the foggy thinking of the age. It is a distinct challenge to the smug Babbitts, and an encouragement to the despairing youth of the country caught, as they are, between the nether millstone of a war, and the upper millstone of a complaisant conservatism.

Benjamin Horace Hibbard

University of Wisconsin

Land Utilization in Minnesota, a State Program for the Cut-Over Lands. Final Report of the Committee on Land Utilization; Minneapolis: The University of Minnesota Press, 1934. Pp. VII, 289. $1.50.

A Program for Land Use in Northern Minnesota, a Type Study in Land Utilization; Oscar B. Jesness, Reynolds I. Nowell and Associates. Minneapolis: The University of Minnesota Press, 1935. Pp. XVI, 338. $2.50.

The two volumes present a comprehensive picture of the problems arising in the cut-over areas of Minnesota with suggested programs for remedying the maladjustments in land utilization, government, and social relationships. Both books cover the same material only as far as background data are concerned. The first is the report of a committee appointed by Governor Floyd B. Olson in 1932 with instructions to formulate specific recommendations. This committee, with the assistance of the University of Minnesota and the Lake States Forest Experiment Station, drew upon already available material in making its report. On the other hand, the second volume is based upon the findings of specific research in the 14 northeastern counties of Minnesota made in cooperation with the United States Department of Agriculture. In both publications the various chapters are assigned to one or more authors. In spite of this, duplication as between chapters is practically absent, showing the result of careful editing.

Land Utilization in Minnesota sketches the physical background of the land uses of the state and the historical development of each use. Past federal and state policies are presented with their social and economic consequences, such as forest devastation, over-expansion of agriculture onto submarginal cut-over and drained lands, resulting in scattered settlement, tax delinquency and excessive costs for local governments which have to be aided by state subsidies in order to survive.

Based upon present trends in population, the estimate is made that

Minnesota may reach a stationary population of about 3 million which calls for an expansion of agricultural land of about half a million acres. The use for the remainder of the 14 northern counties is forests and recreation. Minerals and water resources, particularly flood control, erosion, power and drainage are also considered.

Emphasis is placed on the relation between maladjusted land uses and taxation and local government. Through the relation of local governments to the state the entire commonwealth has become involved in the problems of the cut-over counties. It is interesting to note how the local units of government have been able to preserve themselves by obtaining aids or forcing the state to divide taxes and incomes with them. Even the title of the state to tax reverted lands is shared with local taxing units in Minnesota.

The Report makes definite recommendations for the simplification of local government, clarification of title to tax reverted land, the limitation of local indebtedness and changes in the state aid system. The classification and zoning of land is recommended with suggested uses and ownerships for the various land types as found in 5 designated areas. This work is to be carried out by permanent state and county land use committees.

The first few chapters of *A Program for Land Use in Northern Minnesota* consist of a general description of the 14 cut-over counties covering soils, climate, population, industries and government, followed by a detailed description of each of the 12 natural areas into which the entire region has been divided. The results of the *laissez faire* policies of the past with its isolated settlement on submarginal land and farm abandonment are shown by the researches made in the area and presented in terms of low farm income, inadequate social services (including education and medical care) and the indebtedness of local governments. Part I closes with a review of federal, state and local policies such as the federal forest program, AAA, tax delinquency, state aids, etc. in their relation to the land problems of northern Minnesota.

Part II presents definite programs and policies which the state should inaugurate. The authors make a careful distinction as to land inventory, classification, and zoning. Based upon the research made in the region, they set up two broad land classes in each of the 14 counties presented by tables and maps. These classes coincide with the "conservation" and "agricultural" districts for zoning purposes. The "conservation zones" represent land which is unable to yield a net return from agricultural use in the light of present and prospective economic conditions or lands so located that if new settlement were permitted at the present time an undue burden would be placed upon the public to provide roads, schools, and other public services. It is proposed to control the land uses in each of the districts by county zoning, and an excellent discussion of zoning follows—the legal aspects, the enabling act, and the procedure of enacting ordinances by the people of the county. The need for local cooperation and participation is emphasized.

Land classification and zoning in themselves are negative or neutral in their effects. It is significant therefore to find a chapter devoted to the improvement of agriculture in the areas assigned to agriculture and other chapters dealing with private forests, the cost and income problems of the private forest owners, and the relation of forest taxation and credit to

successful private ownership of forest land. The place of federal, state, and county forests is also discussed, particularly with reference to tax reverted lands, exchange of land, and the reaction of one type of ownership on the other. Since tax reverted lands fall to the state, county forests will be a minor factor in Minnesota.

Following classification and zoning of land the program of adjustment is not complete if settlers are permitted to remain on submarginal land or in isolated places. Therefore one of the most important chapters is the one dealing with problems involved in moving farm families. Farm records were secured from settlers in so-called "relocation areas" and a special study was made of the Brimson area where 135 settlers living in 3 townships are now located on submarginal land. The procedure of relocation is given in detail. Not only would the people themselves benefit by this relocation on better soils and in established farm communities but almost $26,000 could be saved annually in the costs of local government. This represents *net* savings after the additional costs for schools, roads, and other public services in the areas to which the people are to be transferred are subtracted from the gross savings. The county will be the chief benefactor with a saving of $19,000 out of the total of $26,000.

Adjustments in local government for the entire 14 counties and for counties, towns, and schools are considered in the next chapter. Savings in local government could be made by making such readjustments as the consolidation of certain county offices, transferring town functions to the county, the elimination of small schools, the substitution of the Lake county plan or a similar system for the present independent school systems, and the consolidation of counties. It is estimated that the reorganization of the local governments of the 14 counties would save $443,600 per year. Reorganization together with settler relocation would bring the savings to $923,400, or almost a million dollars annually.

It is difficult and perhaps audacious for one not acquainted with a state to evaluate tables, maps and text material dealing with specific situations. Nevertheless it seems impossible to reconcile some of the figures presented on page 142 of *Land Utilization in Minnesota*. According to the table on this page the total expenditures of the 965,000 out of state tourists was about 51 million dollars in 1932, whereas the expenditures of a mere 4 thousand Minnesotans was almost 12 million dollars. The same difference holds for other years but not to the same degree.

The danger of generalizing land areas or regions is illustrated by the map on page 225 of the same volume. On this map only a strip of land along the Canadian boundary is classed as recreational land whereas a map on page 139 shows that there are at least three other recreational areas of importance which are lost by "generalizing" too broadly. Furthermore a close reading of chapter 3 of the second volume, describing the 12 natural areas of the northern part of Minnesota, indicates discrepancies in classification of the land in the first book as presented in five general classes.

Although called a "program for land use" in northern Minnesota, the second volume presents no plan for the development of the recreational resources of the area in contrast to the specific programs outlined for farms and forests. The chapter dealing with the acquisition of land for public purposes does not mention parks, wilderness areas, game refuges,

and hunting grounds. These are discussed, however, in the chapter on "The Use of Land for Recreation" in first volume (*Land Utilization in Minnesota*), and over three million acres are recommended to be devoted to public recreational lands in addition to 130,000 acres for residential areas largely in private ownership.

There is no mention of a plan for the future development of the private recreational land for summer homes, cottages, resorts, clubs, and camps in the second volume. A program of this kind should include suggestions for the protection of the amenities of such land against undesirable uses. Since private land is involved, this can be done by the setting up of "recreational land zones." The "conservation zones" as provided for in the sample zoning ordinance (pp. 155-158) are primarily forest districts with seasonal recreational uses as a secondary use. Counties with considerable recreational land need a third type of zone. Out of the 18 counties in Wisconsin zoned to date (May 1935), seven have provided for a recreational zone in addition to "forest" and "unrestricted" districts. The sample ordinance has been adapted from the Oneida county ordinance which has only two districts.

A recreational land program might also suggest means of social control of private land aside from the restrictions set up by zoning. For instance, it has been found desirable to control the platting of water frontage to prevent overcrowding the lake shores, and monopolization of the public waters by private land owners. Zoning and control of land uses for recreation will be found useful and desirable also in the two lake regions lying outside of the 14 northern counties constituting the northern Minnesota for which the program was designed.

However, the two volumes are a notable contribution to land economics, land planning, and political science as related to land utilization. The second volume especially gets away from vague generalizations and specifically designates areas and suggests programs of action. As a "type study" in land utilization it can well serve as a model for others to follow.

George S. Wehrwein

University of Wisconsin

The Battle for Democracy, by Rexford Guy Tugwell. New York: Columbia University Press, 1935. Pp. 321. $3.00.

The book is a collection of addresses which have been delivered by the author during the period between June, 1933 and June, 1934. Among these are interspersed a few short sections which are apparently brief beginnings of essays on the subjects dealt with. The discussions relate to a wide range of subjects as may be noted from the following partial list of chapter headings: "Design for Government," "An Experiment in Reconstruction," "Our Weight in Gold," "Banking for the People," "Freedom in Business," "The Economics of the Recovery Program," "The Place of Government in a National Land Program," "International Economic Policy," and "Consumers and the New Deal," not to mention "Wine, Women, and the New Deal" and "Life As a Long-Time Enterprise."

With only one or two exceptions both the addresses and the interspersed essays have been prepared for semi-popular audiences, and the warrant for reviewing them in a technical journal lies not in the rigorousness and quality of the reasoning presented but in the extent to which they may

be assumed to represent the views of one holding a high official place in the government, one rather generally assumed to be the spokesman if not the leader of one of the many points of view which now find expression in the activities centering in Washington.

To assume entire candidness in the public addresses of one placed as Mr. Tugwell is would perhaps be both unrealistic and unjustified. To some extent, therefore, his thinking must be inferred in the light of the whole group of discussions rather than through intensive analysis such as might be called for in more scientific treatises.

In some respects it is unfortunate that the book is put together as a chronological array of addresses and writings. The reader would gain a better impression of it if he could start with some of the later chapters such as that on the national land program. Very possibly the lessening vagueness and the decrease in what sometimes strikes one as wishful thinking may be the result of a growing intimacy of contact with the problems and a greater opportunity for analysis which have come to the author during the year. How much to discount because of limitations which inevitably circumscribe a high government official is a matter difficult for the reader to decide. For example, in the first essay, called "Design for Government," we find the statement, "President Roosevelt is establishing at this most critical period an enduring pattern of administrative conduct. A lesser man, a self-aggrandizing, humorless one, a person less gifted with administrative talent and less eagerly hungry for wisdom, a dogmatizer without the experimental attitude, would merely have aroused false hopes which his accomplishments would have destroyed. The new design, with its unavoidable stress on vigorous governmental administration, possesses promise of endurance because it found precisely the right man. He is creating a lasting standard of administrative conduct below which none of his successors will dare to fall." It is difficult to decide whether this is a considered judgment, an emotional statement based upon warm admiration for an individual, or merely the customary deference to the political superior.

One is tempted to feel throughout the series of discussions that there is assumed to be a greater change in the institutions and thinking of the American people than probably has occurred. This is a natural and probably usual tendency for most people who seek to bring about reforms. An able and experienced historian made a comment a year or two back that even so violent an upheaval as the French Revolution probably did not change the actual conditions of the French people by more than five per cent. No doubt the propounder of this thesis would have considerable difficulty in finding a base to which to apply his five per cent. Nevertheless it contains a thought which is too often overlooked. The major shifts in human institutions and in public policy are likely to be discounted by later reactions in opposite directions. The fundamental changes have always tended to move forward with somewhat the immutability of a lava flow or a glacier. Even the drastic rearrangements brought about by the Russian Revolution seem to be gradually bending back in the direction of the older ways and the time-honored methods of the past.

In the very brief chapter called "The Senior Partner" the author discusses the supposed change from a competitive to a planned economy. It is assumed that an economy based upon allowing "certain businesses

to cooperate as they want to do instead of competing" will be more efficient than to have them competing with one another. Whether this so-called planned activity is more efficient than competition depends, of course, upon the objectives and upon the quality of the plans. Actually the planners have apparently given much more emphasis to price objectives than to larger real incomes for the nation's people. The author states that "the public objectives to be gained are fair wages and working conditions for the employed, fair prices for the consumers, and, under the Agricultural Act, fair prices for the producers of farm products. No agreement or code need be recognized which does not meet these tests." This statement inevitably raises a number of questions in the mind of anyone who has followed even superficially the progress of the NRA during the past eighteen months. For example, what are prices that are "fair to the consumers"? What are "fair wages"? One is inclined to wonder if to most of the makers of codes they are not prices a little higher and wages a little lower than would have prevailed under the older semi-competitive, semi-monopolistic order. The notorious inability of the Consumers' Advisory Board to force social objectives into these relations has not been in any considerable measure from lack of sincerity and social mindedness on the part of the Administration. It has rather come about through inarticulateness and lack of organization, so far as the consumer groups are concerned, and from the almost complete absence of any developed criteria by which to judge what are fair prices and fair wages. In the agricultural phase of the program, whether the objective be defensible or indefensible, there has been at least a fairly definite, congressionally established, goal in the way of prices toward which the efforts are to be directed. This may be only an attempt, possibly justified, to introduce into agriculture some of the absurdities of restriction which have for years characterized many phases of industrial and labor organizations. Nevertheless, it does state rather definitely a goal to be striven for.

There is much indication in several of the addresses and essays that the author recognizes that the actual trend of activities in the NRA has not been along the lines which were visualized in the early stages of the present Administration. Nevertheless, one feels a certain disappointment that these questions have not been faced more frankly and more thoughtfully and real attempts made to define adequately the social objectives sought. Few will disagree with the broad and general statements of objectives but many will be inclined to question whether the procedures developed have actually moved in these directions. There seems often a lack of realism in considering motives and attitudes. Is it reasonable to suppose, for example, that industrialists or even labor leaders will choose to submit themselves to the irksome requirements of a code unless they are to gain something individually or as a group by so doing? Will not the gain they see be usually a class or group advantage to be attained mainly at the expense of other groups in society? After all, government agencies have usually had to maintain a wary attitude in their dealings with private agencies and individuals if they were not to be exploited by them to the detriment of the public.

The author brings this chapter to a close with the following broad statement: "For the first time in our history industry can now be organized to express its technological possibilities. It can move forward with

a vast productive program without destroying its own market by cutting wages and raising prices. What each produces, the workers in every other will be able to consume." Assuredly a laudable purpose, but one still must seek an explanation of how this is to be brought about, and how inarticulate, unorganized consumer groups are suddenly to be made able to hold their own with vociferous, highly organized, producer groups who know what they want and don't care too much whether the thing they want is in the public interest. These questions are raised not as "spurious appeals to a tradition of individualism" but as a frank and not unfriendly inquiry whether we have as yet a workable alternative to "individualism."

The chapter dealing with the gold standard likewise leaves much to be desired in penetration and realism. The brief comments presented must, of course, be recognized as merely a few general notes. One would not expect to discuss the gold standard in three and a half pages. Possibly it would have been more effective to have omitted it.

An aspect of the problems discussed above appears in the chapter on "Freedom and Business," where the author gives recognition to the difficulty of harmonizing social and private views with respect to prices. "It seems clear enough that if purchasing power had equaled the price required for our goods there would have been no failure of demand. And it is a curious paradox of progress that the situation should have been intensified by gains in efficiency. Good public policy seems to require such a management of this matter in the future that a better relationship between costs and prices is maintained. Otherwise we shall have more and worse depressions in the future, rather than fewer and more moderate ones.

"The question immediately arises: What can the Government do to protect industry against itself in this respect? I say protect industry against itself rather than protect consumers, because the interests here are ultimately identical. Industry cannot operate permanently and continuously unless it adopts the policy of relating its prices to its costs. It was with a realization of this background that certain sections of the Agricultural Adjustment Act and the National Recovery Act were framed. It was conceived under both these acts that industry might control its own prices if adequate public remedies were reserved for enforcement. . . . If, in general, industries are willing to admit that the policy of relating costs to prices is a necessary one, it will now be possible to prevent recalcitrant business men from wrecking a program of stable prices." This line of reasoning raises many questions which do not seem to be dealt with in an adequate way either in this book or in any other statements from the Administration which the writer has seen. Is a program of stable prices consistent with a program of relating prices to costs? Possibly some of our prices were too stable during the period from 1923 to 1929. Code authorities are likely to think in terms of stable prices for individual commodities; the author is probably thinking here of a stable general price level, with some modifications. Also this seems to assume a stable demand which will absorb any amount which may be produced so long as prices and costs are kept in line. Changes in costs with larger or smaller production may, of course, follow a very different pattern from changes in amounts demanded at lower or higher prices.

The author recognizes several of these problems in an immediately following statement as follows: "More attention, so far, has been given by

business men to the prevention of price cutting. This also is one of the difficulties which can be met, but it is a more immediate and obvious one, and not anything like so important as this other one of relating prices to costs and reducing the margins of profit. The whole effort looks toward stability and many industrialists recognize both sides to the problem. But even if they should be reluctant to see that their interests must at last be brought into consistent relationship with those of consumers and workers, the Government does not lack power for persuasion."

Chapter VIII on "Prices and Dollars" does not come to real grips with the problem. The real difficulty does not center around the desirability of some stabilizing of the dollar but rather around the practical possibility of bringing this about.

In the chapter following, there is further clear recognition of the need for a somewhat different price policy than that which has developed under the NRA. For example, "The wherewithal for expansion cannot be had until we have definitely and with honest commitment gone over to the low-price, large-volume program. That was contemplated under NRA. Nothing but higher wages and farm incomes, together with moderated retail prices, can redress the maladjustments which continue to exist in the structure of our prices. Profits will have to follow from new efficiencies. To put them first is to put the cart before the horse." This statement will meet with rather widespread approval. One may question, however, whether it is consistent with the idea of stability in prices which runs through many of the other discussions. Again in the address on the "Economics of the Recovery Program" delivered at the Institute of Arts and Sciences, Columbia University, the author seems to be developing a somewhat different view of the approach to these problems. He discusses the variations in the flexibilities of different groups of prices and seems to be moving more definitely away from the notion of great stability in individual prices which has been rather characteristic of many of the code authority approaches to operations under the NRA. In fact as the book progresses there seems to be a growing consciousness of some of the difficulties which have been mentioned in discussing the earlier chapters.

Chapter XVII, "The Place of Government in a National Land Program," is already familiar to readers of the Journal of Farm Economics, having appeared in the January issue of last year. It is one of the best of the series of papers.

In the chapter dealing with "International Economic Policy" is an interpretation, supposedly an administration view, of the London Conference which is interesting in that it seems to reflect a different understanding of this than that which has been generally current. "If, at the London Conference, Europe had shown a disposition to enter on policies similar to ours—to engage in public works, to raise prices and relieve debtors—a genuine turn toward internationalism might have come then. But there was no such disposition. And that was the real failure at London; the responsibility did not rest, I should say, with the United States.

"It is barely possible that the conference might have succeeded in this if it had been held in Washington. The exposure of the statesmen to President Roosevelt's gallantry and charm; the understanding they might have got of what it was our nation was fully determined to do; the sense of renewed hope which had come to our people out of a program of courageous

action—all this might have induced them to accept American leadership and to parallel the effort being made here. But that did not happen. Their imaginations were not fired, and they preferred to follow more orthodox courses."

The passages quoted and the comments previously given will be sufficient to indicate the nature of the book. The wide range of subjects and their lack of continuity make an adequate review of all of them too large an undertaking. The importance of the discussions lies more in their implications than in their statements since most are couched in rather general terms and for popular audiences.

M. R. Benedict

University of California

Public Finance, edited and annotated by Elmer D. Fagan and C. Ward Macy. New York: Longmans, Green & Co. 1934. 987 pages. $4.75.

While publication of a book of readings in any field ordinarily does not command unusual attention, this particular book is sufficiently unique in its purpose and plan to merit careful consideration. Two fundamental ideas seem to have guided the editors. One is that in a field where excellent contributions have been made by many writers, it is possible to bring together the best thought of such men in a text which should be superior to that written by any one man. The other is that previous textbooks in public finance have placed insufficient emphasis on "fundamental economic principles in their relation to the problems of public finance."[1] In this book, the editors seek to stress economic analysis throughout.

The book, then, is presented as a basic text for use in courses in public finance, as well as for use as a book of readings. The editors have chosen their readings with view to preserving continuity, have followed the arrangement of subject-matter which is customary in public finance texts and have placed at the conclusion of each chapter questions and problems for discussion, suggestions for research and an extensive bibliography.

The material is timely, without being superficial. Chapters or sections are included which deal with such widely-discussed questions as the proper ratio of public to private expenditures, the proper limits of state industrial activity, general versus selective sales taxes, the dangers and effects of a large internal public debt, the control of public expenditures, and public works in relation to business fluctuations. The public works problem is dealt with at unusual length.

Many examples could be given of the economic analysis which the editors have woven into the book through their selections, but we may here note the sections dealing with the subject of incidence (of which more will be said later), the long chapter on "Ideals in Taxation" to which Alfred Marshall, Hugh Dalton, John Hobson and others contribute, Professor Blakey's discussion of the income concept for purposes of taxation, Professor Viner's articles on "Taxation and Changes in Price Levels" and "Who Paid for the War?" and Shutaro Matsushita's chapter on "Modern Theories of Public Credit," in which he critically summarizes the views of Bastable, Pigou, Dalton, Adams, Seligman and others.

Another noteworthy feature of the book is the exhaustive treatment of

[1] Preface.

the problems of property taxation. Beginning with a discussion of the theoretical and practical defects of the general property tax by Professor S. E. Leland, we find successively chapters dealing with the classified property tax, the taxation of land value, the incidence of real estate taxes, taxation of natural resources and the taxation of business.

By their selection of readings, the editors have presumably revealed something of their own philosophy. Apparently they subscribe to a socio-political theory of taxation, under which the State is justified in consciously changing to some extent the inequalities in the distribution of wealth. The type of tax system which the editors seem to support may follow in part from their acceptance of this theory. Running through the readings is the point of view that taxes should be based primarily on the ability-to-pay principle, that such ability is best reached by highly progressive taxes on large incomes and inherited wealth, that revision of the general property tax should involve abandonment or restriction of property taxes other than taxes on real estate, with more emphasis being placed on the taxation of net incomes of businesses and individuals. Selective sales taxes may be used, but the inequities of any general sales tax, together with its regressive character, are such as to make its use undesirable.

These proposals are in accordance with the best in present-day tax theory. It should be noted, however, that one may argue for the taxation of net incomes at highly progressive rates without accepting the thesis that the state should deliberately seek to modify inequalities in wealth distribution. Such a state policy, in fact, raises grave problems with respect to its effect on future capital accumulation, and while the editors are not altogether unaware of this, yet they do tend to build their theoretical reasoning with respect to taxation too much on the socio-political theory.

Much more attention is given to the subject of the shifting and incidence of taxation in this book than in most texts on public finance, an emphasis for which the editors should be commended. A general chapter on "The Shifting and Incidence of Taxation" is followed later by chapters or sections dealing with the incidence of the main types of taxes. Nothing essentially new is presented in the various discussions of incidence, but an effort is made to probe a little more deeply into the incidence problem than is customary. Thus, M. S. Kendrick makes a partial analysis of the possible effects of expenditures of funds derived from taxes on the production and prices of the particular commodities which are taxed. He indicates, too, that a tax on some capital may become a tax on all capital through the shifting of the factors of production from taxed to untaxed fields. There is even an attempt by Prof. H. D. Simpson to analyze the incidence of a tax on buildings and improvements under short-run conditions in terms more specific than "economic friction." Professor Simpson arrives at a conclusion considerably different from that of orthodox incidence theory of the usual long-run character. This is all suggestive of the fact, that, in the future, incidence theory must concern itself more and more (1) with the effects on various industries of the expenditures of tax-funds and (2) with questions of incidence in what Marshall calls the "short-run normal." The chapter on the incidence of income and excess profits taxes, it should be added, is drawn from the well-known Colwyn

Report of 1928, which is probably as fine a single piece of research into incidence as has yet been done by a governmental body.

In conclusion, it may be said the Professors Fagan and Macy have done a highly competent piece of work in compiling this text. Economic analysis is constantly stressed, continuity is successfully maintained, and nearly every important problem in present-day public finance is opened up to the student through the eyes of the best scholars which the subject has produced.

Edward D. Allen

University of Minnesota

Family and Society: A Study of the Sociology of Reconstruction, by Carle C. Zimmerman and Merle E. Frampton. New York: D. Van Nostrand Company, Inc., 1935. Pp. XV, 611. $3.50.

This volume is a welcome exposition and interpretation of the sociological method of Frédéric LePlay, with illustrations of its use with American material. The three chapters of Part One give the general point of view of the authors with regard to the relation of the family to society and methods of studying the family. In the four chapters of Part II are given a brief biography of LePlay and a systematic account of his theories. Part III, in 11 chapters, gives an application of the LePlay method in studies of the Ozark Highland family and of the weak family organization of a New England mill village, which are related to the problem of family reconstruction. The 12 chapters of Part IV are an abridged adaptation of Volume I of LePlay's Les Ouvriers Europeens from an original translation by Professor Samuel Dupertuis of Boston University. Although this is condensed into little over a third of the original, it "gives his whole doctrine" without mutilation, and is a valuable addition to sociological literature for those who do not read French.

In Part I the authors first show how the relation of the family to society is now in a stage of transition and they advance the thesis that the method of LePlay is the "New approach to the problem which is needed at this time." In outlining the new approach to family research the work of previous workers in the field is grouped under three categories: (1) the evolutionary hyopthesis of of Bachofen, McLennan and Morgan; (2) the functional hypothesis of Bebel and Marx who held that the family is a function of the economic system, with a wholly different analysis of family relations in terms of the reaction of structure and function within the family type as an adaptation to a changing environment as outlined by Sanderson and Foster; and (3) the companionate hypothesis, so named by the authors, of those current writers who "represent a feeling that the family exists for the individual rather than for society," of whom Ogburn might be cited as an exponent. The authors' criticism of these approaches to the sociological analysis of the family is rather too brief and assertive to be convincing. No mention is made of the recent monumental works of Briffault or Sumner and Kellar, which are remarkable in their essential agreement and which make important contributions to the evolution of the family quite independently of the older authors cited. The so-called companionate hypothesis is criticized on the ground that "if we adapt the family to the individual, we no longer have the institution." *Either* society

is organized by institutions which have values independent of the individual, *or* there can be no institution. "Either there is a family with institutional values, or society is a loosely formed aggregate of individuals, changing and structureless." It would seem that the authors here fall into the familiar "either-or" fallacy. The family is an institution and its institutional values are forced upon the consideration of the individual through the established mores, but if these contravene the interests of most individuals, then the mores will gradually be changed. Increasingly, as the individual becomes consciously aware of the control of the institution its values must be made to coincide with what seem to him to be his best interests.

The authors seem to approve the position of LePlay who held that there is but one universal family type; but just what are the characteristics of such a universal type which includes monogamous and polygamous, maternal and paternal forms of families, is not made at all clear. The context would seem to imply that this universal type of the family consists of the family as an economic unit for the maintenance of its members, but this is not so stated. Practically LePlay's universal type seems to be the good old patriarchal family, and in spite of all his protestations of objective research, it is very evident from his own statements in Part IV that he has no place for aberrant forms of family relationships. Just how this is an "empirical" approach, as stated by the authors needs explanation. The matter of fact is that LePlay hardly touched the problem of the sociological structure of the family, for it had not arisen in his day, but devoted himself to a study of its socio-economics as revealed in the analysis of its budget. He undertakes to interpret the relation of the family to the society in which it exists through an analysis of its budget on the ground that "there scarcely exists a sentiment or an act worthy of mention in the life of the worker which does not have its corresponding place in the budget of receipts and expenses."

Part III which records the American Studies of the authors is the original and most valuable section of the book. It is oriented around the problem of the reconstruction of families now on relief. The authors distinguish what they call "sub-family types," the "strong" family of the Ozark Highlander and the "weak" family of the New England mill village, and describe the family economy of each and show the self-sufficiency of the former and the inability of the latter to maintain itself under an economic depression. Relating these differences to the problem of rehabilitation of industrial workers the authors sum up their conclusions in the statement that "formal changes in the situation of a population without internal adaptations in the family structure are of no particular avail as measures of long-time relief or reconstruction." The contrast between the two family types described clearly illustrates this point. The description of the Ozark Highland families is particularly helpful in the consideration of relief problems in the Appalachian Highlands. These descriptions furnish good examples of the use of the "typological" method for the study of differences in family organization, and the authors make a good case for the use of this method as over against the purely quantitative or statistical method of family research.

"The strong family type is one in which the members, through the family tradition, are always thinking of the future"; i.e. of the economic

stability and perpetuity of the continuing family, which is necessarily associated with a more or less self-sufficient type of agriculture or other family industry. The type of family is, therefore, defined chiefly in terms of its economic stability, and is a consideration of the ongoing family line, rather than the individual family of parents and children. Concerning the changes going on in family structure, in the trend toward and equalitarian relation between husband and wife and a less authoritative dominance of children by parents, the book is entirely silent. Certainly the economic organization of the family and its relation to society as an agency for the economic security of its members, must be included in any scheme for family research; but from this it does not necessarily follow that the most important problems of family structure and of the relation of the family to society are within this area.

The authors are to be congratulated upon an able exposition and illustration of the LePlay method, which will undoubtedly stimulate its wider use. Their challenge of some of the current assumptions with regard to the possibility of rehabilitating stranded families through a mode of life quite foreign to their mores, is most opportune and enlightening. Concerning their general philosophy of the family—which is more implied than explicit—and the means of its reconstruction to meet modern conditions there will be wide difference of opinion. The book is one which is worthy of thorough study and is a valuable contribution in seeking to define the objectives of family life and the function of the family in modern society.

Dwight Sanderson

Cornell University

Agricultural Cooperation in Fascist Italy, with Full Account of the General Organization of Cooperation, by Freppel Cotta. London: P. S. King and Son, Ltd., 1935. Pp. xv, 148. 7s. 6d.

Cooperation in Italy has experienced vast changes in its make up since the coming of Fascism. The need for these changes is explained by Mr. Cotta, largely on the basis of the political activities of the federations previous to the advent of Mr. Mussolini to power. One of the groups was aligned with the Parliamentary Socialist Party, another with the Catholic party, and a third gave allegiance to the Fascists. Political partnerships intensified the strife between cooperative organizations designed mainly to serve non-political common ends. Since Fascism admits of no political opposition, it is logical that the cooperatives be brought under the domination of this party.

Premier Mussolini announced in November, 1925, the principles which should govern cooperation under his rule:[1]

> 1. The unity of the Movement in the sense that Fascist Co-operation, naturally unitary, aims at creating an organization, the voluntary character of which does not exclude efficient co-ordination.
>
> 2. The supremacy of the State in the sense that the State must intervene to regulate and to supervise the development of Co-operation.

Cooperatives must serve the State. The author is friendly to this point of view, at least, he is not critical. The important question, it seems to the

[1] Page 7.

reviewer, is whether cooperatives can grow and develop as a subservient part of a political party. Certainly they did not flourish in Italy when espousing the causes of different political groups. It is doubtful if their greatest long-time developments can come when under the control of a single political machine. Under Fascism cooperation has unity, but one suspects that this "coordination" involves huge sacrifices from the standpoint of voluntary action which is the essence, the foundation of self-help efforts. A probable reply to this surmise is that cooperation has gone forward in Italy during the past decade; it has flourished under the "alleged" domination of the State. Such an answer raises questions: What will happen to the movement should there be a change of the party in power? Is it best that self-help cooperative societies add to their hazards of operation by increased dependence upon fluctuating policies of political powers?

Just a word about the methods of control exercised by the government. The most important are those placing the cooperatives under the Minister of National Economy who has the power not only to inspect but to dissolve their managing boards and to appoint a representative of his own to run the organization. In the final analysis, this is complete control. The Government in addition created a semi-official organization which has the power to inspect and investigate. It is this agency that carried on the process of "elimination" and "consolidation" during the early purges.

The "over all" agency of Italian cooperation is the Ente Nazionale Fascista della Cooperazione (Fascist National Cooperative Organization) referred to as the Ente. It is the coordinating, arbitrating, and promoting arms of the movement. Only federations are affiliated with it. A description of its complex organization requires space quite beyond the limits of this review. It has no counterpart in the United States.

Mr. Cotta's contribution consists largely in his faithful description of the movement as it exists today in Italy: organization policies, management practices, membership make up and volumes of business. His role is that of a friendly reporter rather than a critic. He has given to readers in English speaking countries much valuable information not readily available to them.

As is to be expected, most of his materials are taken from official and semi-official sources. These are interpreted in the light of personal visits with leaders and to some of the organization headquarters. One is led to wonder as to the extent of these personal visits by such naïve remarks as: "In order to acquaint himself with the work of the consorzi, the writer spent *almost a whole day* at Grosseto"[2] and "The writer spent *several hours* acquainting himself with the various departments."[3]

At times the recorder permits his enthusiasm to gain the better of his reason. For instance, in speaking of a cooperative agricultural labor society, he says:[4]

> Besides agricultural work, the society undertakes great public works, and has played a prominent part in reclaiming Ostia, and in building up the fine new seaport of Rome, Ostia del Mare, its grand promenade and fine buildings, besides the splendid

[2] Page 48. Italics those of the reviewer.
[3] Page 122. Italics those of the reviewer.
[4] Page 39.

23 kilometre long 30 metre wide avenue and the electric railway leading to it from Rome.

This society is of modest proportions even for a cooperative. It seems reasonable to suppose that its contributions to the building of the model city of the generous proportions of Ostia could not have been large in comparison to the size of the undertaking.

Regardless of its lack of analysis backed by supporting data, students of cooperation will do well to turn to Mr. Cotta's Agricultural Cooperation in Fascist Italy as one of the best descriptions, perhaps, of the cooperative movement in that country at the present time.

Asher Hobson.

University of Wisconsin

Current Economic Policies, ed. by Joseph B. Hubbard, Editor-in-chief. New York: Henry Holt & Co. 1934. XII, 700 pp. $3.50.

Twelve professors of the Department of Economics and the Graduate School of Business Administration, of Harvard University, have carefully selected and edited this collection of periodical articles, together with certain original contributions, pertaining to current problems, policies, plans and programs, of economic nature and significance in the United States.

The result is a book containing material which is partly informative and partly argumentative, useful and valuable, alike, to the student of economics and the general reader, desirous of keeping apace with the stride of the "New Deal."

The authoritative quality of its informative sections and the adroit presentation of its controversial aspects are, in large measure, assured by the identity of the authors of the included articles.

The editors have made an admirable and successful effort to establish and maintain a balance of opinion throughout every topic-section of the book, which is remarkable for its lack of bias. In all controversial cases, due allowance has been made for the adequate presentation of both sides of the question, so that it would be difficult to ascertain the personal position of the editor of the particular section involved. In each case, a factual foundation is laid as a basis for the controversial structure.

The material presented in the section on agriculture is chiefly informational, rather than controversial, in nature. It includes a somewhat detailed statement of the conditions surrounding, and the situation existing in, the field of agriculture as a whole, early in 1933, followed by a consideration of future federal policy in regard to agriculture, as set forth in Henry A. Wallace's booklet, "America Must Choose," and a review of the federal measures undertaken in an effort to promote agricultural well-being. The classification of these measures as pertaining to (1) production, prices and marketing, (2) land utilization, and (3) credit, allows for a consideration of the objectives of the Agricultural Adjustment Administration, the formulation of a comprehensive land-use plan, the rehabilitation of ejected farmers, the establishment of subsistence homesteads, and the mechanism of the Farm Credit Administration in its several aspects.

Sumner H. Slichter has contributed a well-balanced study of the labor aspects of the National Recovery Administration, tracing its influence

upon employment, wages, labor costs, collective bargaining and unionism.

Among the more controversial sections are those relating to money, the Securities Act of 1933, and railroad regulation. In the first of these, George F. Warren and Reginald McKenna present pro-inflationary arguments from the American and British points of view respectively, while Lionel D. Edie and Charles Rist uphold the cause of gold. It is interesting to note the degree to which certain predictions of the opposing parties have or have not been fulfilled since their statement in 1933. In the section devoted to the Securities Act, Bernard Flexner flourishes his weapons as a staunch advocate of the preservation of the original form of the Act of 1933, and is met in direct reply by Eustace Seligman in support of amendment. Discussion of railroad regulation includes the First Report of Joseph B. Eastman, Federal Coordinator of Transportation, emphasizing the benefits of, and necessity for, government regulation of railways, and the retort of the railroads, embodied in an article by R. V. Fletcher, Vice-Chairman and General Counsel, Association of Railway Executives.

Other interesting contributions include Herbert D. Simpson's interpretation of the old and modern concepts of "laissez-faire," and an article entitled "Wanted Consumers," in which F. W. Taussig convincingly analyzes the increased-consumer's-income remedy for depression ills.

For the more ambitious reader, desiring to obtain additional information on the topics treated in this volume, selected bibliographies of the book and periodical material available are provided. These should be especially valuable to instructors of economics, using this work as a guide in current problem studies.

The book is open to criticism for its apparent lack of coherence, and the impression of conglomerate mass which it leaves upon its reader, but it must be acknowledged that the enemy, Depression, is being bombarded by federal forces from numerous angles, and in the short run, one cannot always perceive complete coordination between the various plans of attack.

A. V. Williams

University of California

Deutsche Agrarpolitik, by Max Sering with the Collaboration of H. Niehaus and F. Schlömer. Leipzig: Hans Buske Verlag. 1934. Pp. V, 194. RM 6.

This study, prepared by staff members of the German Institute for Agriculture and Land Settlement, was reported at the International Conference of Agricultural Economists held in Germany during 1934.

Although the foreword indicates this is a descriptive report based on factual information, rather than on an evaluation of policies or proposals, certain important aspects of the problem obviously are omitted. This may have been due to the expediency of making the report brief or not presenting data of a controversial nature, because leaders of the National Socialist regime preferred not to have them mentioned.

More than 130 references are cited, most of them since 1930, especially those in Part II. If these had been shown as a bibliography, it would have facilitated their use. However, the footnotes describe them completely enough so that whatever publications are wanted can be identified readily. One wonders why no reference is made to Aereboe's much larger "Agrar-

politik" or to the five-volume publication "Handbuch der Landwirtschaft" by Aereboe, Hansen, Roemer and others. The reader welcomes frequent reference to Sering's "Die deutsche Landwirtschaft" because it is the most recent book describing German agriculture.

This report is divided into two parts of three chapters each, the first part including 71 pages and the latter 123 pages. The first part should appeal particularly to the agricultural historian because it is devoted to a description of the natural, historical and economical background of German agriculture. The last chapter of the first part ends with a discussion of the World War and Germany's downfall.

The most timely part of this study is Part II. This will stimulate leaders, students and statesmen concerned with agricultural problems in the United States, and research workers in agricultural policy and international agriculture.

The reader will become impressed with the similarity of many measures taken to relieve the agricultural depression in the United States and Germany. Chapter IV includes a discussion of social agricultural measures. Agricultural co-operation, farm credit and agricultural indebtedness are discussed in Chapter V. The reconstruction of agricultural production prior to the outbreak of the world-wide depression is described in the first part of Chapter VI. This is followed with brief discussions of the price collapse and measures for recovery for each of the important types of farm products. Laws passed during 1933-1934 affecting the marketing of farm products are described very briefly. The study concludes with an eight-page summary stressing the social significance of recent trends in the agricultural and national economy. Some readers will probably be disappointed in not finding a discussion of the relation of recent changes in agricultural policy in Germany to the reparations problem, while others will welcome the emphasis on an appeal for increased international trade.

Professor Sering's leadership in the various agricultural reforms, his prestige in discussing economic problems and his maturity of judgment, as he has passed the retirement age many years ago as head of the Department of National Economy at the University of Berlin, makes this book one that Americans interested in this field of work can not afford to ignore.

A. F. Hinrichs

Purdue University

NEWS ITEMS

The twenty-sixth annual meeting of the American Farm Economic Association will be held December 27-30, 1935 at New York City. Headquarters of the Association will be at the Commodore Hotel.

FOURTH INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS

The fourth meeting of the International Conference will be held in Scotland the latter part of August or the first part of September, 1936.

Trips will doubtless be arranged to farms in England, in Scotland, and on the Continent of Europe preceding and following the Conference.

Proceedings of the Third Conference which was held during the summer of 1934 are now available. Membership fee of $5.00 which will include copy of the Proceedings may be mailed to G. F. Warren, Cornell University, Ithaca, N.Y. or to J. R. Currie, Dartington Hall, Totnes, Devon, England.

The annual agricultural outlook conference will be held this year during the week of October 28-November 2, at Washington, D.C. Home management specialists will again take part.

The annual meeting of the National Association of Marketing Officials will be held in Chicago, Ill., December 4-6, 1935, at the Drake Hotel.

A Department of Agricultural Economics and Farm Management has been formed at Massachusetts State College by merger of the Department of Agricultural Economics with the Department of Farm Management. Dr. Adrian H. Lindsay heads the new department. Work in economics has been separated from the former Department of Economics, History, and Sociology to form a Department of Economics, headed by Dr. Alexander E. Cance.

Dr. Thomas Clark Atkeson, of Buffalo, West Virginia and Washington, D.C., a pioneer in the service of agriculture, died March 26, 1935, in his 84th year. Dr. Atkeson was a Professor of Animal Husbandry at West Virginia University for several years, and Dean of the College of Agriculture for 13 years. He organized the West Virginia State Board of Agriculture, serving as a member of it for 14 years, most of the time as its President. For 24 years he was Master of the West Virginia State Grange, Patrons of Husbandry, and took an active part in the affairs of the National Grange, as National Overseer for several terms, and as head of the National Legislative Committee and of the Executive Committee. From 1919 to 1927 he was Washington Representative of the National Grange.

Students from foreign countries taking graduate work in Agricultural Economics and Farm Management at Cornell University last year were: Victor Jonkmans, from Belgium; J. R. Raeburn, from Scotland; F. Hernandez, from Spain; A. L. Prinsloo and A. J. Duplessis, from South Africa; P. C. Chao, W. Y. Yang, H. T. Yang and Y. S. Chen, from China; S. C. Hudson, W. J. Hansen and J. C. Mathieson, from Canada. Mr. Hansen and Mr. Mathieson although Canadians by birth, have more recently come

from India and China respectively, where they do teaching and missionary work.

Spencer B. Cleland who has been on leave returned to his position of Extension Economist, University of Minnesota, on July 1.

Mr. Owen K. Dawson, agricultural commissioner at Shanghai, China, returned to the United States early in July for a period of home leave.

Mr. Marvin Guin, who obtained his master's degree at Iowa State College in June, has returned to his position with the South Carolina Experiment Station.

Dr. V. B. Hart has resigned from his position with the Production Credit Corporation in Springfield, Mass., and has resumed his duties as Extension Professor of Farm Management at Cornell University.

Dr. Kenneth Hood (Cornell University, 1934) has taken a position as Assistant Professor of Agricultural Economics Extension at Pennsylvania State College.

Dr. E. C. Johnson, who has been on leave from the Division of Agricultural Economics, University of Minnesota, while serving as Vice President of the Production Credit Corporation, St. Paul, has returned to his position at the University.

Professor M. Slade Kendrick, Cornell University, has been serving the Agricultural Adjustment Administration as an expert on processing taxes. His leave from Cornell University expires in September.

Mr. E. R. McIntyre returned to the editorial staff of the Wisconsin Agriculturist and Farmer, Racine, Wisconsin, after two years of service with the Agricultural Adjustment Administration in Washington, D.C., as special writer.

Dr. E. G. Misner has returned to Cornell University after spending his sabbatical leave in Belgium, where he made a study of the Boerenbond Belge, a cooperative organization of farmers, and also helped to outline a farm management survey of Belgian farms.

Mr. Niels I. Nielsen, Agricultural Attache at Paris, France, has been designated Official Delegate of the United States to the Second International Congress of Rural Engineering, to be held at Madrid, Spain, September 26-October 3, 1935.

Dr. William Ockey, for the last several years farm management specialist in agricultural extension at the University of California has accepted a position as senior agricultural economist in the U. S. Extension Service, with headquarters at Washington, D.C.

Dr. S. E. Ronk (Cornell University, 1934) has accepted a position as Business Analyst in the Springfield, Mass., Bank for Cooperatives.

Dr. J. T. Sanders, head of the Department of Economics, Oklahoma A. & M. College, spent the month of June in Washington, D.C., completing a report on his study of damage to farm property from smelter fumes blown across the Canadian border in a section of the State of Washington.

Mr. John B. Schneider has been appointed extension specialist in agricultural economics at the University of California, taking over the duties of Dr. Ockey, resigned.

Mr. Clayton B. Taylor has been appointed junior agricultural economist in the Division of Land Economics, Bureau of Agricultural Economics, at Washington, D.C.

Mr. Fred Taylor, specialist in marketing cotton, Foreign Agricultural Service has been recalled from the Orient to the Washington office.

Mr. G. J. C. Uys, who spent the year in graduate study at the University of Minnesota, has returned to his work in South Africa.

Dr. S. W. Warren has returned to Cornell University as Assistant Professor of Farm Management, after nine months service with the Farm Credit Administration, at Washington, D.C.

Dr. Harry R. Wellman has returned to his duties in the Agricultural Extension Service at the University of California.